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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
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OFFICE OF TECHNICAL SERVICES
John C. Green, *Director*

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TECHNICAL TRANSLATIONS

Volume 9, Number 4 Pages 327 - 444 February 28, 1963

*Descriptors marked with an asterik are listed in the subject index.

BIBLIOGRAPHY

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
Jan 63, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 47. 10 Dec 62 [28]p. JPRS: 16593.
Order from OTS or SLA $2.60 63-13467

Trans. of 7 selected articles from Sep-Oct 62 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Scheduling, Hydraulic systems, Mounting brackets, Machine tools, Industrial equipment, Industrial plants, Machines, Transportation, Hoists, Cargo vehicles, Trailers, Standardization.

Contents:
The new agricultural machinery of the Liepaya Liepaisel'mash plant, by V. Chechetkin
Difficulties at the Rubtsovsk tractor spare parts plant
The waste of the DT-54 tractor hydraulic mounts
The difficulties of the L'vov L'vovsel'mash plant
The difficulties in the production of the SSh-75 self propelled chassis, by L. Voronov and others
The MoAZ-542 truck tractor of the mogilev hoist and transport equipment plant, by B. Buzhanov
The standardization difficulties at the Volgograd and other tractor building plants, by M. Sidel'nikov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 49. 26 Dec 62 [13]p. JPRS: 16824.
Order from OTS or SLA $1.60 63-13644

Trans. of Narodnoe Khozyaistvo Uzbekistana (USSR) 1962 [v. 4] no. 9, p. 64-65; and from Rabochaya Gazeta (USSR) 1962, 6 Nov; 13 Nov (excerpt) Ekonomicheskaya Gazeta (USSR) 1962 [no. 42 (63)] p. 36; Pravda Vostoka (USSR) 1962, 19 Sep (excerpt).

DESCRIPTORS: *Industrial plants, Sanitary engineering, Production, Cotton, Machines, Industrial equipment, *Industrial production, *Tractors, *Agricultural machinery.

Contents:
Information on the Odessa plant imeni Oktyabr'skaya Revolyutsiya
The Taifun street sweeper on the streets of L'vov, by A. Avroshko
Important gaps at Khar'kov engine building plant
Towards all-round mechanization of cotton growing
Reconstruction of the Krasnoyarsk plant, by M. Ulyanov
Machinery of the future is being tested, by V. Mikhailov

Yugov, A.
DECREE GOVERNING THE TASKS AND ORGANIZATION OF SCIENTIFIC INSTITUTES AND EXPERIMENTAL STATIONS ATTACHED TO THE ACADEMY OF AGRICULTURAL SCIENCES (NO. 149, 6 SEP 62). 7 Nov 62 [13]p. JPRS: 16079.
Order from OTS or SLA $1.60 62-33690

Trans. of Narodno Subranie. Izvestiya (Bulgaria) 1962 [v. 13] no. 80, p. 1-3.

DESCRIPTORS: Scientific organizations, *Agriculture.

Animal Husbandry

Ezovitov, N. B.
KUIBYSHEV SCIENTIFIC RESEARCH VETERINARY STATION (Kuibyshevskaya Nauchno-Issledovatel'skaya Veterinarnaya Stantsiya). 1 Aug 62, 8p. Trans. V-1790
Order from OTS or SLA $1.10 62-32348

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 384-388.

DESCRIPTORS: Scientific research, *Veterinary medicine, Epidemiology, *Infections, *Animals, Inhibition.

Gazizova, G. R. and Sergeeva, P. A.
MIXED INFECTION WITH Q-RICKETTSIOSIS AND BRUCELLOSIS IN CATTLE (Smeshannaya Infektsiya Ku-Rikketsioza i Brutselleza u Krupnogo Rogatogo Skota)· 24 Nov 61, 14p. (2 figs. Eng. summary omitted) 9 refs. Trans. V-1751.
Order from OTS or SLA $1.60 62-23299

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1961, v. 32, no. 7, p. 117-123.

DESCRIPTORS: *Q fever, Rickettsia, *Brucellosis, *Cattle, *Pregnancy, Antibodies, Diagnosis, Veterinary medicine.

Stratification of brucellar infection on top of Q-rickettsiosis caused in cattle aggravation of the first infection accompanied by the appearance of clinical symptoms of the disease and an increase of the titer of complement fixing antibodies to Rickettsia burneti. An analysis of the serological investigations conducted during the infection process of the herd demonstrated that the Q-rickettsial infection invaded the herd considerably more slowly than brucellosis. The causes that determined the indicated development of the epizootic process in the case of rickettsiosis in cattle requires [further] study. In animals infected with Q-rickettsiosis, as well as in those infected with brucellosis during the calving period were observed abortions, inhibition of the placenta during calving and barrenness. Q-rickettsiosis fairly often took a chronic course (observations up to 3 1/2 years) with aggravation [of infection] during the calving period. Infection of cattle with Q-rickettsiosis was accompanied by the appearance of complement-fixing antibodies in the blood of the animals; the level of these antibodies increased slowly and rarely exceeded a titer of 1 : 80. In individual cases of relatively clinical well-being, complement-fixing antibodies were disappearing, but they reappeared when the infection was aggravated during the calving period. (Author)

Parakin, V. K.
ABORTIONS IN SHEEP INFECTED WITH FOOT-AND-MOUTH DISEASE (Aborty u Ovets pri Yashchure). 1 Feb 62, 3p. Trans. V-1763.
Order from OTS or SLA $1.10 62-23288

Trans. of Veterinariya (USSR) 1961, v. 38, no. 11, p. 33-34.

DESCRIPTORS: *Sheep, *Foot-and-mouth disease, Veterinary medicine

Stepanov, P. A.
LIST OF DISSERTATIONS DEFENDED AT THE COUNCIL OF THE ALL-UNION INSTITUTE OF EXPERIMENTAL VETERINARY MEDICINE FOR THE PURPOSE OF OBTAINING AN ACADEMIC DEGREE OF DOCTOR AND CANDIDATE OF VETERINARY AND BIOLOGICAL SCIENCES DURING THE YEARS 1935-57 (Perechen'Dissertatsii, Zashchishchennykh v Sovete Vsesoyuznogo Instituta Eksperimental'noi Veterinarii na Soiskanie Uchenykh Stepenei Doktora i Kandidata Veterinarnykh i Biologicheskikh Nauk za 1935-57 gg.) 6 Aug 62, 25p. 338 refs. Trans. V-1791.
Order from OTS or SLA $2.60 62-32352

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 458-474.

DESCRIPTORS: *Theses, *Veterinary medicine, Biology.

Zotov, V.
IRKUTSK SCIENTIFIC-RESEARCH VETERINARY STATION (Irkutskaya Nauchno-Issledovatel'skaya Veterinarnaya Stantsiya). 26 July 62, 3p. Trans. V-1788.
Order from OTS or SLA $1.10 62-32097

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 374-375.

DESCRIPTORS: *Veterinary medicine.

Plant Cultivation

Arutyunyan, N. P.
FIRST EXPERIMENT IN THE REPRODUCTION OF UNICELLULAR GREEN ALGAE IN OPEN RESERVOIRS (Pervyi Opyt Razmnosheniya Odnokletochnykh Zelenykh Vodoroslei v Otkrytykh Vodoemakh). 3 Aug 62, 15p. 9 refs. Trans. A-1356.
Order from OTS or SLA $1.60 62-32347

Trans. of Akademiya Nauk Armyanskoi SSR [Erevan]. Izvestiya. [Biologicheskie i Sel'skokhozyaistvennye Nauki] 1961, v. 14, no. 5, p. 85-91.

DESCRIPTORS: *Algae, Reproduction, Hydraulic reservoirs, *Proteins, Nutrition, Culture media.

Cechova, Marcela.
PEST CONTROL: "FETTERED DEATH". 26 Nov 62 [7]p. JPRS: 16364.
Order from OTS or SLA $1.10 63-13255

Trans. of Vlasta (Czechoslovakia) 1962, v. 16, no. 32, p. 8-9.

DESCRIPTORS: *Plants, *Pest control, *Lepidoptera, Insects, Communicable diseases, *Bacteria, Soils.

An account of the development of a technique for controlling caterpillers by means of induced infection with Bacillus thuringiensis.

Chesnokov, P. G.
RESISTANCE OF AGRICULTURAL PLANTS TO PESTS. 1961, 17p. PL-480 Agr.
Order from OTS $0.50 60-51051

Trans. of Ustoichivost' Sel'skokhozyaistvennykh Rastenii k Vreditelyam, Leningrad, 1955 [30]p.

DESCRIPTORS: Agriculture, *Plants, *Pest control, Diseases, Genetics, Ressitance, Insects

Ivanov, E. N.
A MEETING OF THE COORDINATION COMMITTEE FOR THE PROTECTION OF PLANTS. 3 Dec 62 [8]p. JPRS: 16487.
Order from OTS or SLA $1.10 63-13279

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1962 [v. 7] no. 5, p. 58-60.

DESCRIPTORS: *Agriculture, Symposia, *Plants, Pest control, Diseases, Cereals, Pesticides.

The all-union thematic plan for research in 1962 includes 14 problems: the theoretical basis for long-term and short-term prognoses, new measures for combatting pests, diseases and weeds for grain crops, protection for corn, beans, cotton, sugar beets, vegetables and potatoes, fruits and vines, oil and bast crops, the theoretical basis for creating new chemical preparations and methods for using them, the biological and biophysiological methods, nematode and virus diseases and the questions of plant quarantine. (Author)

Riegerowa, Halina and Muszynska, Krystyna.
INVESTIGATIONS ON LODGING OF GRAIN VARIETIES (Badania nad Wyleganiem Odmian Zboz) tr. by W. Kulerski. 1962, 12p. 16 refs. PL-480 Agr.
Order from OTS $0.50 61-31273

Trans. of Hodowla Roslin, Aklimatyzacja i Nasiennictwo (Poland) 1957, v. 1, no. 4, p. 527-539.

DESCRIPTORS: *Cereals, *Plants, Ecology, Climatology, Etiology, *Genetics, Adaptation (Physiology).

Semenenko, V. E. and Nichiporovich, A. A.
INSTALLATION FOR THE STUDY OF ALGAE (Ustanovka dlya Izucheniya Vodoroslei). 19 July 62, 6p. Trans. A-1355.
Order from OTS or SLA $1.10 62-32349

Trans. of Akademiya Nauk SSSR. Vestnik, 1962, v. 32, no. 1, p. 77-79.

DESCRIPTORS: *Algae, Laboratory equipment, Culture media.

Yoshida, T. and Takahashi, T.
ON THE BEHAVIOR OF NUTRIENT ELEMENTS ABSORBED BY THE TOBACCO PLANT. [1962].
Order from K-H K-H 11071-f

Trans. of [Nihon Dojo Hiryogaku Zasshi] (Japan) 1961, v. 32, no. 1, p. 15-18.

DESCRIPTORS: *Tobacco, Absorption, *Nutrition, Plants.

ASTRONOMY

STUDIES IN USSR RADIOASTRONOMY. 20 Dec 62 [52]p. 7 refs. JPRS: 16786.
Order from OTS or SLA $5.60 63-13460

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. Trudy, 1962, v. 17, p. 3-41.

DESCRIPTORS: *Radio astronomy, Astronomy, Scientific research, Laboratories, Astronomical observatories, *Telescopes, Reflectors, Design.

Contents:
Development of radioastronomy research in the radioastronomy laboratory of the Physic Institute, Academy of Sciences USSR, by V. V. Vitkevich
Radiotelescope with 22-meter reflector, by A. E. Salomonovich.

Kondrat'ev, K. Ya.
INTERNATIONAL SYMPOSIUM ON THE INVESTIGATION OF COSMIC SPACE (NO. 3) WASHINGTON, 1-8 MAY 62. 18 Dec 62 [27]p. JPRS: 16749.
Order from OTS or SLA $2.60 63-13490

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1962, v. 78, no. 1, p. 167-179.

DESCRIPTORS: Conferences, Reports, *Astronomy, *Geophysics, *Atmosphere, *Meteorology, Meteorological balloons, Research planes, Sounding rockets, Satellites (Artificial), Spacecraft, Meteorological satellites, Scientific organizations.

Kuprevich, N. F.
A METHOD OF DETERMINING THE AMOUNT OF ATMOSPHERIC TURBULENCE IN OBSERVATIONS OF ASTRONOMICAL IMAGES BY MEANS OF A DIFFERENCE IMAGE IN A TWO-CHANNEL OPTICAL AND TELEVISION SYSTEM. 27 Apr 62 [4]p. MCL-1318.
Order from OTS or SLA $1.10 62-24926

Unedited rough draft trans. of Soviet patent 131101, (643171/26) 3 Nov 59, 2p.

DESCRIPTORS: *Atmospheric motion, Turbulence, Determination, Astronomy, *Optical equipment, *Television equipment, Optical images, Distortion.

A method of determining the amount of atmospheric turbulence in observations of astronomical images by means of a difference image in a two-channel optical and television system is discussed. It involves the use of a two-channel optical system with a varying distance between the mirrors and operating in different portions of wavelengths of the visible spectrum, a two-channel television system, which constructs on the screen of a kinescope the difference image of the two channels, and a semiautomatic photoelectric device for continuous determination and recording of the angle of atmospheric turbulence. (Author)

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 46. 31 Oct 62, 22p.
JPRS: 15976 NASA N62-17884

Order from OTS $16.00/year 61-11147-46
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, USSR, *Astrophysics.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 47. 15 Nov 62, 22p.
JPRS: 16203.
Order from OTS $16.00/year 61-11147-47
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, Oceanography, *Astrophysics.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 48. 30 Nov 62, 25p.
JPRS: 16455.

Order from OTS $16.00/year 61-11147-48
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, USSR, *Astrophysics.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 49. 17 Dec 62, 22p.
JPRS: 16706.

Order from OTS $16.00/year 61-11147-49
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, USSR, *Astrophysics.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 50. 31 Dec 62, 36p.
JPRS: 16924.
Order from OTS $16.00/year 61-11147-50
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, Oceanography, *Astrophysics.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Avraamova, G. V.
THE DETERMINATION OF METEOR RADIANTS BY THE METHOD OF SUSTAINED OSCILLATIONS.
24 Aug 62 [10]p. FTD-TT-62-591; AD-286 584.
Order from OTS or SLA $1.10 62-33648

Unedited rough draft trans. of Odessa U. Trudy (USSR) 1959, v. 149, p. 31-36.

DESCRIPTORS: *Meteors, Flight paths, Determination, Oscillations, Trigonometry, Radio equipment, *Transmitter receivers

Fesenkov, V. G.
THE BEGINNING OF MASTERING COSMIC SPACE.
31 May 62 [24]p. FTD-TT-62-819; AD-283 866.
Order from OTS or SLA $2.60 62-32983

Unedited rough draft trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Ata]. Vestnik, 1962 [v. 18] no. 1[202] p. 3-14.

DESCRIPTORS: *Space flight, *Satellite vehicle research, *Astronomical data, Meteorites, Gases, Sky brightness, Moon, Sun, Jupiter, Mars, Venus, *Planetary atmospheres.

Grudzinska, S.
THE ABUNDANCE OF CO^+ IONS IN THE TAILS OF COMETS. [1961] [8]p. 11 refs.
Order from SLA $1.10 62-10152

Trans. of Annales d'Astrophysique (France) 1960, v. 23, no. 5, p. 797-801.

DESCRIPTORS: *Comets, Carbon compounds, Monoxides, Ions, Abundance, Astrophysics.

The comparison of the intensities of the (2-0) bands of CC^+ (in the tail) and the (0-1) bands of CN (in the head), at various distances from the nucleus, in Bester's Comet (1947k) has allowed the determination of the relative abundances of CO^+ and CN at less than 130,000 km from the nucleus. It is found that the abundance of CO^+ in the tail is 30 to 40 times greater than that of CN in the head. If the abundance for CN is taken equal to that suggested for C_2 by Wurm, it is found that in the region of the head, the tail contains a number of CO ions on the order of 10^6 per cm^3. (Author)

Komel'kov, V. S.
A POSSIBLE MECHANISM OF PARTICLE EJECTION FROM THE SUN. 10 Dec 62 [13]p. 12 refs.
JPRS: 16590. NASA N63-10978.
Order from OTS or SLA $1.60 63-13476

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 146, no. 1, p. 58-61.

DESCRIPTORS: *Solar disturbances, Particles, Ejection, *Magnetohydrodynamics, *Plasma jets, Models (Simulations), Magnetic fields, Solar radiation.

The possible role of solar magnetohydrodynamic eddies as particle ejectors is discussed.

Kotel'nikov, V. A. and others.
RADAR OBSERVATIONS OF VENUS. 17 Dec 62 [9]p. 7 refs. JPRS: 16728. NASA N63-10973
Order from OTS or SLA $1.10 63-13554

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 145, no. 5, p. 1035-1038.

DESCRIPTORS: *Radio astronomy, *Venus, *Radar signals, Radar reflections, Broadband, Narrowband, Radiofrequency spectroscopy.

A discussion of possible implications of the fact that both narrow- and wide-band signals were received during radar observations of Venus in April 1961.

Koval', I. K.
ON THE DEGREE OF SMOOTHNESS OF THE CONTINENTS AND SEAS OF MARS. 19 Sep 62, 2p. AID rept. 62-143, suppl. to AID rept. 61-138;
NASA N62-16270; AD-285 342.
Order from OTS or SLA $1.10 62-33383

Abstract trans. of Akademiya Nauk SSSR. Komissiya po Fizike Planet, 1959, v. 1, p. 85-92.

DESCRIPTORS: Planets, *Mars, Surface properties, Astrophysics.

Pikel'ner, S. B.
THE MAGNETIC FIELD OF THE CRAB NEBULA AND ITS CENTRAL STAR (Magnitnoe Pole Krabovidnoi Tumannosti i Tsentral'noi Zvezdy). Nov 62, 26p. 26 refs. NASA Technical trans. F-112.
Order from OTS $0.75 63-11527

Trans. of Astronomicheskii Zhurnal (USSR) 1956, v. 33, no. 6, p. 785-799.

DESCRIPTORS: *Nebulae, *Stars, *Magnetic fields, Polarization, Spectra (Visible and ultraviolet), Radiofrequency spectroscopy, Electron optics, Radio astronomy.

Contents:
Observations of Polarization
Estimation of the Field from the Spectrum Form
Estimation of the Field from Energy Density Distribution of Optical and Radio-Emission
Estimating the Mass of the Envelope
Influence of the Expansion of the Envelope on the Spectrum of the Particles
The Nature of the Field
The Magnetic Field of the Star

Ol', A. I.
ON THE ASSOCIATION OF THE VARIATION OF COSMIC RAYS IN HIGH LATITUDES WITH SOLAR ACTIVITY AND GEOMAGNETIC DISTURBANCES. [1962] [74]p. 34 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R15. When supply is exhausted, order from OTS or SLA $7.60, 62-18849

Trans. of Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Trudy (USSR) 1960, v. 223, p. 110-149.

DESCRIPTORS: *Cosmic rays, Intensity, Diurnal variations, Solar flares, Geophysics, Terrestrial magnetism, Magnetic storms, Mesons, Neutrons, Arctic regions.

Salomonovich, A. E.
OPTICS OF MILLIMETER WAVES AND RADIOASTRONOMY. 14 Dec 62 [16]p. 9 refs. JPRS: 16686.
Order from OTS or SLA $1.60 63-13544

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1962, v. 77, no. 4, p. 589-596.

DESCRIPTORS: *Radio astronomy, *Microwaves, Optics, Electromagnetic waves, Waveguides.

A survey of recent research.

Tsesevich, V. P.
THE QUESTION OF PROCESSING RADAR OBSERVATIONS OF METEORIC ECHOES. 27 Aug 62 [20]p.
FTD-TT-62-595; AD-286 620.
Order from OTS or SLA $1.60 62-33645

Unedited rough draft trans. of Odessa U. Trudy (USSR) 1959, v. 149, p. 9-23.

DESCRIPTORS: *Meteors, Flight paths, *Radar reflections, Processing, Trigonometry

A method of processing is developed based on the hypothesis of specular reflection of radio waves from a meteor trail.

BIOGRAPHIES OF SOVIET SCIENTISTS. 1 Nov 62 [72]p. 100 refs. JPRS: 15997.
Order from OTS or SLA $7.60 62-33701

Trans. of 9 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Personnel, Botanists, Medical personnel, Microbiology, Epidemiology, Chemists, Physicists, Pharmacology, History.

Contents:
I. D. Yurkevich, E. G. Libgott, A. Z. Gzirishvili, K. V. Bunin, I. S. Rubinshtein, A. I. Shuba, E. A. Uspenskii, B. V. Deryagin, P. L. Senov.

PROBLEMS OF PSYCHOLOGY, 1962 [VOL. 8] NO. 3: SELECTED TRANSLATIONS. 29 Nov 62 [91]p. 44 refs. JPRS: 16404.
Order from OTS or SLA $8.10 63-13333

Trans. of Voprosy Psikhologii (USSR) 1962 [v. 8] no. 3, p. 3-26, 37-44, 95-105, 149-155, 173, 177-184, 190.

DESCRIPTORS: *Psychology, *Perception, Growth, *Behavior, *Children, *Automation, Industrial psychology, *Maintenance personnel, Power plants, *Electrical equipment, Control, Applied psychology, Learning, Personnel, Electromagnetism, *Time-interval counters, *Machines, Labor, *Training, Education.

Contents:
The establishment and development of perceptual activity, by V. P. Zinchenko and others
Variability of mental functions in the course of development of the child, by A. R. Luriya
Some means of increasing the efficiency of an operators work in man-automatic machine systems, by D. A. Oshanin and V. F. Venda
Study of the role of the personal factor in the control of power plant electrical equipment, by K. M. Gurevich and S. S. Gadzhiev
Study of the conditions of generalization, by E. Golas
Some physiological mechanism in the initial development of the child's mental life, by V. K. Fedorov
Electromagnetic counter, by K. A. Ramul'
Some trends in the study of "man-machine" systems in the United States, by M. I. Bobneva
Conference on problems of labor psychology work training and education, Yaroslavl', 1961, by V. V. Karpov.

Braines, S.N., Napalkov, A. V., and Svechinskii, V. B.
NEUROCYBERNETICS. 11 Dec 62 [172]p. 140 refs. JPRS: 16638. NASA N63-10985.
Order from OTS or SLA $12.50 63-13520

Trans. of mono. Neirokibernetika, Moscow, 1962, 172p.

DESCRIPTORS: *Cybernetics, *Bionics, Bioelectronics, *Artificial intelligence, Neurology, Nervous system, *Nerves, Automation, Conditioned reflex, Control systems, Control simulators, *Programming (Computers), *Data processing systems, Classification, Data storage systems, *Information retrieval, Physiology, *Medicine, Learning, Decision making, Reasoning, Human engineering.

Contents:
The content of neurocybernetics
Elements of the theory of neural networks
Systems capable of independently developing new programs for their operation
Forming new programs of operation by processing accumulated information
Problems of classifying shapes and concept formation by automata
Some questions on the use of neurocybernetics in physiology and medicine

Karpoff, Sylvain.
FUNCTIONAL PEN HOLDER, tr. by J. R-P. 29 Oct 62, 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-33780

Trans. of French patent 1,191,434, gr. 18, cl. 1, internat. cl. B43b, appl. filed 11 Feb 58, granted 13 Apr 59, pub, 20 Oct 59.

DESCRIPTORS: *Pens, *Pencils, Design, Handling, Automatic, Education, Applied psychology.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 10 (BIOLOGY AND MEDICINE SERIES). 19 Nov 62 [41]p. JPRS: 16244.
Order from OTS or SLA $4.60 63-13349

Consist of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, East Germany, Hungary, and Poland.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, *Czechoslovakia, *East Germany, *Hungary, *Poland, *Drugs, Production, Storage, Chemical analysis, Fertilizers, Agriculture, *Diseases, Cancer, Therapy, Antibiotics, Tuberculosis, *Nervous system, *Gastrointestinal system, *Cardiovascular system, *Toxicity, Radiobiology, Radiation effects, *Communicable diseases.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 14 (BIOLOGY, MEDICINE AND GENERAL SERIES). 30 Nov 62 [64]p. JPRS: 16435.
Order from OTS or SLA $6.60 63-13338

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, Hungary, and Poland.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, *Hungary, Czechoslovakia, Pathology, *Tumors, *Cancer, Electroencephalogy, *Brain, Diagnosis, *Diseases, Ganglia, Heart, *Pituitary hormones, Psychology, *Conditioned reflex, *Biliary system, Growth substances, Physiology, *Urinary system, Blood coagulation, Electrophoresis, Blood proteins, *Metabolism, Tissues (Biology), *Vaccines, *Communicable diseases Antibiotics, *Drugs, Virus diseases, Language, *Education, Neoplasms.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 15 (BIOLOGY, MEDICINE AND EARTH SCIENCE SERIES). 4 Dec 62 [59]p. JPRS: 16502.
Order from OTS or SLA $5.60 63-13284

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia and Hungary.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, Geology, Czechoslovakia, Hungary, *Brain, *Pathology, *Spinal cord, Autonomic nervous system, Metabolism, *Psychology, Reflexes, *Neuromuscular transmission, *Psychiatry, Sleep, Electroencephalography, Diabetes, Drugs, *Cardiovascular system, Peptic ulcers, *Gastrointestinal system, Agriculture, Soils.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 17 (BIOLOGY AND MEDICINE SERIES). 6 Dec 62 [38]p. JPRS: 16548.
Order from OTS or SLA $3.60 63-13503

DESCRIPTORS: *Abstracts, Biology, Medicine, *Hungary, *Poland, *Yugoslavia, *Diseases, Animals, Man, Pathology, Drugs, *Cardiovascular system, *Urinary tract, Cancer, *Lungs, *Communicable diseases, *Gastrointestinal system, Anatomy.

Consists of abstracts of articles from the East European scientific and technical journals of Hungary, Poland, and Yugoslavia.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 20 (BIOLOGY AND MEDICINE SERIES). 7 Dec 62 [34]p. JPRS: 16575.
Order from OTS or SLA $3.60 63-13529

DESCRIPTORS: *Abstracts, *Biology, *Medicine, *Hungary, *Poland, *Czechoslovakia, Physiology, Children, *Blood disorders, *Diseases, *Cardiovascular system, *Urinary system, *Biochemistry, Cancer, *Communicable diseases, Allergy, *Pharmacology, Drugs, *Neurology, *Blood proteins, Virus diseases, Amino acid.

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, Hungary, and Poland.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 24 (BIOLOGY AND MEDICINE SERIES). 17 Dec 62 [72]p. JPRS: 16719.
Order from OTS or SLA $7.60 63-13549

Consists of abstracts of articles from the East European scientific and technical journals, of Czechoslovakia, East Germany, Hungary, and Poland.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, *Hungary, *Czechoslovakia, *East Germany, *Poland, *Veterinary medicine, *Industrial medicine, Pharmacology, *Drugs, Standards, *Diseases, Animals, *Communicable diseases, Liver, Epidemiology, Physiology, *Nervous system, Gastrointestinal system, Blood chemistry, Anatomy, *Blood disorders, Surgery, Immunity, Diagnosis, Brain, Enzymes, Atmospheric pollution, Nervous system, Radiation effects.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 32 (BIOLOGY AND MEDICINE SERIES). 27 Dec 62 [33]p. JPRS: 16865.
Order from OTS or SLA $3.60 63-13647

Consists of abstracts of articles from the East European scientific and technical journals of Bulgaria and Czechoslovakia.

DESCRIPTORS: *Abstracts, Biology, Medicine, Bulgaria, Czechoslovakia, *Veterinary medicine, Sheep, Cattle, *Agriculture, *Animals, *Communicable diseases, Drugs, Therapy, *Food poisoning, Food, Preservation, Algae, Growth substances, Pathology, *Lungs, *Kidneys, Influenza viruses, *Chemotherapeutic agents, *Plants, Plankton, Cells (Biology), Proteins, *Insects, Hemiptera.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 34 (BIOLOGY AND MEDICINE SERIES). 31 Dec 62 [76]p. JPRS: 16919.
Order from OTS or SLA $7.60 63-13661

Consists of abstracts of articles from the East European scientific and technical journals of Bulgaria, Czechoslovakia, and Hungary.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, Bulgaria, *Hungary, *Czechoslovakia, *Diseases, *Drugs, *Toxicity, Man, *Veterinary medicine, Pathology, Animals, Therapy, Cardiovascular system, Pregnancy *Cancer, Lungs, Tuberculosis, Metabolism, *Biochemistry, Epidemiology, Industrial medicine, Air, Contamination, *Hormones, *Antibioties, *Chemotherapeutic agents, Enzymes, Biosynthesis, Blood coagulation, *Blood chemistry, *Communicable diseases,

Immunity, *Nervous system, Surgery, *Urinary system, *Psychoses, Food, *Gastrointestinal system, Heart, Cholestrol.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AN AND TECHNICAL JOURNALS NO. 39 (BIOLOGY AND MEDICINE SERIES). 3 Jan 62 [13]p. JPRS: 16949.
Order from OTS or SLA $1.60 63-13679

Consists of abstracts of articles from the East European scientific and technical journals of Poland.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, *Poland, Physiology, Kidneys, Liver, *Drugs, *Diseases, *Cardiovascular system, Electrocardiology, *Thyroid gland, Biochemistry, *Biliary system, *Heart, Surgery.

PROBLEMS OF MODERN EMBRYOLOGY: [SELECTED PORTIONS]. Reports delivered at the Conference of Embryologists, Leningrad, 25 Jan-1 Feb 55. 27 Nov 62 [35]p. 13 refs. JPRS: 16392.
Order from OTS or SLA $3.60 63-13346

Trans. of mono. Problemy Sovremennoi Embriologii, Leningrad, 1956, p. 311-321 and 394-400.

DESCRIPTORS: *Embryology, Embryos, Growth, *Tissues (Biology), Genetics, *Immunology.

Contents:
Immunology of embryonic development, by O. E. Vyazov
Study of morphological and antigenic properties of organs and tissues of animals in ontogenesis, by B. V. Konyukhov and R. F. Averkina
List of participants at the Conference of Embryologists
Table of contents.

Aksenov, B. N. and Khitun, V. A.
ALL-UNION CONFERENCE ON THE USE OF RADIOELECTRONICS IN MEDICINE AND BIOLOGY (NO. 2) [MOSCOW, JAN 59]. 10 Dec 62 [12]p. JPRS: 16588.
Order from OTS or SLA $1.60 63-13470

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1962, v. 5, no. 5, p. 140-147.

DESCRIPTORS: *Bioelectronics, Electronics, Biology, Medicine, Conferences.

Brief abstracts are given of some of the papers presented at the conference.

Gazenko, O. and Midler, A.
SPACE BIOLOGY [AND] FORMULA OF WANDERING LIGHT. 14 Dec 62 [13]p. JPRS: 16677.
Order from OTS or SLA $1.60 63-13538

Trans. of Nedelya (USSR) 1962 [no. 32] 5-11 Aug, p. 6-7.

DESCRIPTORS: *Space biology, Weightlessness, Radiation effects, Microorganisms, Nervous system, Psychology, *Venus, Planetary atmospheres, Light transmission.

Gollerbakh, M. M.
MODERN ALGOLOGY AND ITS BASIC TASKS (Sovremennaya Al'gologiya i Ee Osnovnye Zadachi). 23 July 62, 16p. Trans. A-1354.
Order from OTS or SLA $1.60 62-32086

Trans. of Akademiya Nauk SSSR. Vestnik, 1962, v. 32, no. 2, p. 23-28.

DESCRIPTORS: *Algae, Classification, Ecology, Microorganisms, Morphology, Adaptation (Physiology) Marine biology.

Kocherezhkin, V. G.
SESSION OF THE DEPARTMENT OF BIOLOGICAL SCIENCES, U.S.S.R. ACADEMY OF SCIENCES ON THE BIOLOGICAL ASPECTS OF CYBERNETICS. 18 Dec 62 [14]p. JPRS: 16744.
Order from OTS or SLA $1.60 63-13513

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1962 [v. 27] no. 4, p. 644-647. Another trans. is available from OTS or SLA $1.10 as 63-13478, JPRS-16631, 11 Dec 62 [9]p.

DESCRIPTORS: *Cybernetics, Bioelectronics, *Computers, Conferences.

Brief abstracts are given of some of the papers presented at the session, and the resolutions adopted are summarized.

Korcherezhkin, V. G.
MEETING CONCERNING THE BIOLOGICAL ASPECTS OF CYBERNETICS. 11 Dec 62 [9]p. JPRS: 16631.
Order from OTS or SLA $1.10 63-13478

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1962 [v. 27] no. 4, p. 644-647.

DESCRIPTORS: *Cybernetics, Bionics, Biology, *Computers, Conferences.

Abstracts of some of the papers presented and a summary of the resolutions adopted.

Myloserdova, V. D.
A METHOD FOR CULTIVATING INSECT TISSUES. 13 Dec 62 [9]p. 13 refs. JPRS: 16665.
Order from OTS or SLA $1.10 63-13536

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1962, no. 4, p. 540-542.

DESCRIPTORS: Insects, *Tissues (Biology), *Culture media, *Plasma substitutes, Growth, Blood, *Arthropods

Nichiporovich, A. A.
PHOTOSYNTHESIS AND THE PROBLEM OF FOOD RESOURCES. 12 Sep 62 [22]p. FTD-TT-62-533.
Order from OTS or SLA $2.60 62-33651

Unedited rough draft trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 11, p. 47-58.

DESCRIPTORS: *Photosynthesis, *Food, Production, Water, *Moisture, *Oxygen, *Carbon dioxide, Fertilizers, Water supplies, Algae, Solar energy.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
PEST CONTROL (SUPERSEDES CTR-312, CTR-313, CTR-314). Oct 62, 33p. 649 refs. OTS Selective Bibliography SB-486.
Order from OTS $0.10 OTS SB-486

DESCRIPTORS: *Pest control, Pesticides, *Insecticides, *Rodenticides, Molluscicides, *Radiobiology, Coatings, Electric currents, Birds, Parasites, Insect repellants, Sprays, Aerosol generators, Aircraft, Helicopters, Patents.

Lists 649 domestic and foreign references on pest control added to the OTS collection through October 1962. Includes information on various kinds of insecticides and pesticides; pest control by irradiation; pest control by other means, such as, coatings, insect secretions, biopreparation from air-dried insect carcasses, electric current, utilization of birds in combating noxious insects; employment of entomophages (insect eaters); biomethod (parasites used to combat insect pests); insect repellents; rodent control and rodenticides; equipment, such as, dusters, sprayers aerosol generators, airplanes, helicopters. (Author)

Pavshtiks, E. A.
FUNDAMENTAL REGULARITIES IN THE DEVELOPMENT OF PLANKTON IN THE NORWEGIAN AND GREENLAND SEAS. 1961 [20]p. (figs. omitted) 30 refs. [DSIR NLL] M. 3556.
Order from OTS or SLA $1.60 62-24701

Trans. of mono. [Sovetskie Rybo Khozyaistvennye Issledovaniya v Moryakh Evropeiskogo Severa] (Soviet Fisheries Investigations in North European Seas) Moscow, 1960, p. 155-171.

DESCRIPTORS: Aquatic animals, Plants, Marine biology, *Plankton, Analysis, Food, Fishes, Herring, Ecology, Geography, *Norwegian Sea, *Greenland Sea.

Shepoval'nikov, A. N.
ON THE TECHNIQUES OF RECORDING ELECTROENCEPHALOGRAMS IN THE NEW BORN. 7 Dec 62 [6]p. 5 refs. JPRS: 16563.
Order from OTS or SLA $1.10 63-13465

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1962, v. 12, no. 3, p. 563-566.

DESCRIPTORS: Neurology, *Medical equipment, Electronic equipment, *Electroencephalography, Electrodes, *Infants.

A new device for recording EEG's of infants has the form of a bed with a head support which follows the movements of the head. The electrodes, borne on the head support, are clamped in position. Simultaneous recordings may be had of several autonomic and motor reactions.

Weischer, B.
EXPERIMENTAL INVESTIGATIONS REGARDING THE MIGRATION OF NEMATODES (Experimentelle Untersuchungen über die Wanderung von Nematoden). [1962] [16]p. (figs. omitted).
Order from SLA $1.60 62-16713

Trans. of Nematologica (Netherlands) 1959, v. 4, p. 172-186.

DESCRIPTORS: *Nematodes, *Parasites, *Plants, Distribution, Secretions, Growth.

Anatomy and Physiology

BRAIN AND MUSCLE ACTIVITY DURING MUSCULAR WORK. 26 Nov 62 [13]p. 11 refs. JPRS: 16360.
Order from OTS or SLA $1.60 63-13318

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 146, no. 3, p. 728-730 and 734-736.

DESCRIPTORS: *Brain, *Muscles, Physiology, Gases, *Metabolism, Energy, Temperature, Bioelectronics, Electroencephalogy, *Proteins, *Cerebral cortex, Exercise.

Contents:
Gaseous metabolism and bioelectric activity of the brain and muscles of man during muscular work, as affected by temperature, by L. A. Isaakyan and others
Mode of protein restoration in the cerebral cortex as dependent on its functional condition, by E. I. Shnyak.

MEDICINE AND PUBLIC HEALTH IN THE USSR. 26 Dec 62 [29]p. JPRS: 16828.
Order from OTS or SLA $2.60 63-13640

Trans. of Zdravookhranenie Rossiiskoi Federatsii (USSR) 1962 [v. 6] no. 7, p. 37-40; Zdravookhranenie (USSR) 1962 [v. 5] no. 2, p. 3-6; Sovetskoe Zdravookhranenie (USSR) 1962 [v. 21] no. 4, p. 53-56; ##Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 4, p. 499-501; Kommunist Tadzhikistana (USSR) 1962, 15 Jan, p. 3.
##Another trans. is available from OTS or SLA $3.60 in 62-33075, FTD-TT-62-962, 2 Aug 62 [31]p.

DESCRIPTORS: *Medicine, *Public health, Medical research, *Respiration, *Pressure breathing, *Fatigue (Physiology), *Exercise, High altitude, Brain, Blood pressure, Laboratory animals, Nerves, Stimulation, Medical personnel.

Contents:

In the Collegium of the ministry of public health RSFSR, by V. V. Azlin and R. O. Girvids
Urgent problems of planning public health in the Moldavian SSR, by V. I. Kant
The Minsk Medical Institute and its assistance to public health organs, by D. P. Belyatskii and E. I. Shishko
##Symposium on the question of fatigue and the recovery of fitness, Moscow, Nov 61, by N. V. Zimkin
Watching over health, by V. Savenko.

Ivanov, Yu. N.

CHANGE IN THE BIOELECTRICAL ACTIVITY OF VARIOUS BRAIN REGIONS OF CATS AND DOGS ON EXPOSURE TO CARBON DIOXIDE. 18 May 62 [22]p. 23 refs. FTD-TT-62-773. AD-277 650
Order from OTS or SLA $2.60 62-25860

Unedited rough draft trans. of #Fiziologicheskii Zhurnal SSSR, 1962 [v. 48] no. 3, p. 279-289.

DESCRIPTORS: *Bioelectronics, *Brain, *Dogs, Cats, *Carbon dioxide, Cerebral cortex, Electroencephalography.

Changes of the background electrical activity of various regions of the brain were traced with animals breathing small (to 5%) and larger concentrations of carbon dioxide (8-10%). Inspiration of carbon dioxide in small (to 5%) concentrations leads to the development in all regions of the brain of cats and dogs, of characteristic electrical reactions: desynchronization in the cerebral cortex and regions of the optic thalami; desynchronization, manifestation of slow waves or changes in the salvos of electrical impulses in the medulla oblongata. The electrical activity of the cerebral cortex and mainly of its frontal regions changes earliest on exposure. The changes in the electrical activity of the brain stem, as a rule, develop more slowly and restoration of the initial background occurs more rapidly. The exposure of appreciable concentrations of CO_2 and especially of pure carbon dioxide does not enable us to ascertain the characteristics of the electrical responses of the brain regions and the normal dynamics of their occurrence. In such observations, the predominating changes are those of the electrical activity propagated from the stem part of the brain (from the area of the respiration center) over the entire brain. (Extract)

Nasonov, D. N.

LOCAL REACTION OF PROTOPLASM AND GRADUAL EXCITATION, tr. by Y. S. Halpern. 1962, 425p. 915 refs. PL-480 HEW.
Order from OTS $4.25 61-31011

Trans. of mono. Mestnaya Reaktsiya Protoplazmy i Rasprostranyayushcheesya Vozbuzhdenie, Moscow/Leningrad, 1959 [434p.].

DESCRIPTORS: *Cells (Biology), *Adaptation (Physiology), *Reaction (Psychology), *Stimulation, Physiology, Ecology, Tissues (Biology), Membranes (Biology), *Bioelectronics, *Metabolism, *Sorption, Nerves, Muscles, *Temperature, *Biochemistry.

On the basis of a great number of foreign and Soviet studies and monographs, an analysis is given of the fundamental patterns of cell activity. The author develops the protein theory of cell injuries and excitation, analyzes the membrane theory and outlines the sorption theory of cell permeability and bioelectric phenomena. Particular attention is given to the theory of gradual excitation, in which the causes of and conditions for transformation of local bioelectric potentials into spreading potentials are considered. The work also deals with the problem of excitability of nerve and muscle fibers. (Author)

Tryufanov, V. F.

INCORPORATION OF METHIONINE-S^{35} IN THE PROTEINS OF RAT'S LIVER FOLLOWING ADMINISTRATION OF CORTISONE AND UNDER CONDITIONS OF STARVATION. 16 Nov 61 [10]p. 7 refs. JPRS: 11107.
Order from OTS or SLA $1.10 62-13399

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1961, v. 7, no. 4, p. 354-357.

DESCRIPTORS: *Labelled substances, Methionine, *Liver, *Metabolism, Proteins, Glucose, Corticosteroids, Insulin, *Starvation.

The increase of methionine-S^{35} incorporation into the liver cells of rats following administration of cortisoneacetate was confirmed. Injection of insulin with glucose, or injection of fructose alone, reduced the specific activity of liver proteins of cortisone-treated animals to a normal level. Administration of insulin alone led to the reduction of the specific activity of liver proteins in cortisone-treated rats below the normal level. The rate of methionine-S^{35} incorporation into liver cells of starving rats is higher by 38% on the average, as compared with normal animals. Administration of glucose had no effect on the rate of methionine-S^{35} incorporation into the hepatic proteins of starving rats. Administration of insulin with glucose, reduced the methionine-S^{35} incorporation rate into liver protein of the starving rats almost to normal levels. Administration of insulin reduced incorporation of methionine-S^{35} to levels below norm in starving animals. (Author)

Turnsbekov, B.

SUBLINGUAL NERVE AS A SENSORY NERVE OF THE TONGUE. [1962] 9p.
Order from K-H $11.25 K-H 5225 b

Trans. of [Byulleten' Eksperimental'noi Biologii i Meditsiny] (USSR) 1955, v. 39, no. 5, p. 32-35.

DESCRIPTORS: *Nerves, *Tongue, *Taste, Anatomy.

Voronin, L. G. and Aleksandrovskaya, M. M.
ON THE PROBLEM OF THE MECHANISM OF VOLUNTARY MOVEMENTS [AND] MORPHOLOGICAL DATA ON THE STATE OF TISSUE STRUCTURAL ELEMENTS OF THE BRAIN AFTER IMPLANTING ELECTRODES. 7 Dec 62 [21]p. 37 refs. JPRS: 16564.
Order from OTS or SLA $1.60 63-13527

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1962, v. 12, no. 4, p. 569-577 and 727-732.

DESCRIPTORS: Motion, *Motor reactions, Mechanics, *Neuromuscular transmission, Reflexes, Adaptation (Physiology), Stimulation, Conditioned reflex *Electroencephalography, *Electrodes, *Brain, Cells (Biology), Tissues (Biology), Morphology, *Bioelectronics, *Wounds and injuries.

A review of the problem leads to the conclusion that there is no longer any need to suppose any special mechanisms of interaction of the organism and the environment which might stand above the reflex mechanisms and control them. The principle of self-regulation obtains at all levels of activity of the organism from processes at the molecular level to altogether integrated reactions. This principle does not exclude the reflex character of the most diversified forms of its interaction with the external environment, or connections and interactions of its organs and functions. (Voronin) Histologic and histochemical studies of the state of the nerve cells and synapses at the ends of implanted electrodes indicate that structural changes bear a functionally reversible character. Alterative changes of the tissue structural elements of the brain following implantation of electrodes are delimited due to the activation of the protective neuroglia, which perform resorption of the injured tissue without the formation of scar. An accumulation of a large number of glial cells indicate an active role of neuroglia in the production of bioelectrical potentials in the central nervous system. (Aleksandrovskaya)

Biochemistry

PROBLEMS OF MEDICAL CHEMISTRY, 1962, VOL. 8 NO. 5: [SELECTED ARTICLES]. 3 Jan 63 [35]p. 48 refs. JPRS: 16956.
Order from OTS or SLA $3.60 63-13678

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 5, p. 493-497, 525-531, 553-558.

DESCRIPTORS: Medical research, Laboratory animals, Rats, *Acceleration, Physiology) *Histamine, Vasoactive agents, Enzymes, *Peptide hydrolases, Trypsin, Chymotrypsin, *Edema, Inhibition, *Nervous system, *Biochemistry, Symposia, Diamine oxidase.

Contents:
Change in the content of biologically active substances in rats following the action of radial accelerations, by I. M. Khazen and I. L. Vaisfel'd
Mechanism of the antiedematous action of parenterally administered crystalline proteinases, by K. N. Veremeenko
Biochemistry of the nervous system, by N. N. Demin and L. Z. Pevzner.

Raskova, H., Vanecek, J., and Jelinek, J.
CONCERNING A TRANSMISSION OF INCREASED NONSPECIFIC RESISTANCE TO BACTERIAL TOXINS FROM THE MOTHER TO THE FETUS (K Voprosu o Peredache Povyshennoi Nespetsificheskoi Ustoichivosti k Bakterial'nym Toksinam ot Materi k Plodu). 25 July 62, 6p. 8 refs. Trans. V-1789.
Order from OTS or SLA $1.10 62-32085

Trans. of #Farmakologiya i Toksikologiya (USSR) 1962, v. 25, no. 3, p. 301-303.

DESCRIPTORS: *Immunization, *Genetics, Rats, *Bacterial toxins, Transmission, *Embryos, Milk, Phenols

Wada, Einosuke, Ihida, Masanao, and Nakayama, Yoshiko.
THE ENZYMATIC OXIDATION OF CHLOROGENIC ACID AND CAFFEIC ACID IN THE PRESENCE OF NORNICOTINE, PT. II. [1962] 17p.
Order from K-H $21.25 K-H 6445-d

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1957, v. 97, p. 43-48.

DESCRIPTORS: *Enzymes, *Oxidation, *Nicotine, Biochemistry, *Chlorogenic acid, *Caffeic acid.

Botany

Kolomiets, I. A.
THE BIOLOGICAL ANALYSIS OF THE DEVELOPMENT OF THE APPLE-TREE FLOWER BUDS (Biologicheskii Analiz Razvitiya Tsvetochnykh Pochek u Yabloni) tr. by V. A. Soloduhin. [1962] [10]p. (foreign text included) 2 refs. CSIRO] Trans. no. 5816.
Order from OTS or SLA $1.10 62-33095

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 84, no. 4, p. 821-824.

DESCRIPTORS: *Trees, *Apples, *Fruits, Production, Cells (Biology), Nutrition, Temperature.

During the cycle of development of apple-tree blossoms even conditions of nutrition are not required by the cells in the terminal part of the stem. At the same time, not only the composition of the food substances that reach the meristematic cells but also their overall concentration are of great significance. For the initial stage in the development of the meristematic cells into blossoms, nutrients in strong concentration are required, stronger than for the processes involved in the forming of vegetative buds; for the second stage, a flow of food fluids in a more diluted form is necessary. In the development of flower-buds there is no stage at which a low temperature is required. (Author)

Mandryk, T.
ANTHOCYANIC PIGMENTS AND THEIR ANTISEPTIC ACTIVITY IN THE HIGHER ORDER PLANTS (Antotsianovi Pigmenti Vishchikh Roslin ta Ikh Antibakterial'na Diya tr. by J. P. Ruban. [1962] [12]p. (foreign text included) 8 refs. [CSIRO] Trans. no. 5731.
Order from OTS or SLA $1.60 62-32970

Trans. of Mikrobiologichnyi Zhurnal (USSR) 1953, v. 15, no. 1, p. 66-69.

DESCRIPTORS: *Plant pigments, Glucosides, Flavones, *Cyanuric acid, Inhibition, *Diseases, Plants.

General Biology

Gazenko, O. G., Zhukov-Verezhnikov, N. N., and Kop'ev, V Ya.
FIVE DAYS WHICH SHOOK THE WORLD [AND] BIOLOGY AND FLIGHTS TO OUTER SPACE. 20 Dec 62 [25]p. JPRS: 16776.
Order from OTS or SLA $2.60 63-13487

Trans. of Nauka i Zhizn' (USSR) 1962 [v. 29] no. 9, p. 2-10 and 15-20.

DESCRIPTORS: *Space flight, Manned spacecraft, *Space biology, Space medicine, *Microorganisms, Remote control systems.

A discussion of biological investigations made in conjunction with the tandem space flights of Nikolayev and Popovich. (Gazenko). A general review of problems in space biology containing descriptions and diagrams of remote controlled culture chambers used in studies of microorganisms in space vehicles. (Zhukov-Verezhnikov and Kop'yev)

Sedlov, E. I., Sharovatov, I. A. and others.
CONSERVATION D'ÉCHANTILLONS BIOLOGIQUES DANS DES BLOCS DE POLYMÉTACRYLATE DE MÉTHYLE [Preservation of Biological Objects in Polymethylmetacrylate Blocks] tr. by Kefeli. 10 Jan 62 [7]p. 7 refs. CEA Trans. no. R 1480 (text in French).
Order from OTS or SLA $1.10 62-25089

Trans. in French of Akad[emiya] Nauk SSSR. Dokl[ady] 1959, v. 129, no. 2, p. 458-459.

DESCRIPTORS: *Tissues (Biology), Preservation, *Acrylic resins.

Medical Specialties and Equipment

INSTRUCTIONS GOVERNING THE WORK OF COMMISSIONS OF LABOR-SPECIALIST PHYSICIANS. 12 Dec 62 [35]p. JPRS: 16642.
Order from OTS or SLA $3.60 63-13521

Trans. of Narodno Subranie. Izvestiya (Bulgaria) 1962 [v. 13] no. 90, p. 1-8.

DESCRIPTORS: *Public health, Labor, *Physical fitness, *Industrial medicine, Medical personnel, Diseases, Diagnosis, Economics, Bulgaria.

MEDICAL INDUSTRY USSR, 1962 [VOL. 16] NO. 9: [SELECTED] TRANSLATIONS. 7 Dec 62 [13]p. JPRS: 16555.
Order from OTS or SLA $1.60 63-13526

Trans. of Meditsinskaya Promyshlennost' SSSR, 1962 [v. 16] no. 9, p. 13-15, 49-52, 62-63.

DESCRIPTORS: Medicine, *Industrial plants, *Splints, *Chemotherapeutic agents, Chromium alloys, Fractures (Bone), *Hospital beds, Burns.

Contents:
Tasks and future prospects for the development of a new institute, by K. I. Tyulenev
Comochromium alloy for bone surgery, by E. N. Bolkhovitinova and others
A device for handling burn patients, by M. G. Anan'ev and others

MILESTONES IN THE DEVELOPMENT OF MEDICAL SCIENCES IN THE USSR. 26 Dec 62 [29]p. JPRS: 16827
Order from OTS or SLA $2.60 63-13641

Trans. of Sovetskoe Zdravookhranenie (USSR) 1962 [v. 21] no. 9, p. 4-17 and 61-67.

DESCRIPTORS: *Medical personnel, *Training, Physiology, *Nervous system, Psychology, *Vital statistics, *Children.

Contents:
Improvement in the selection and training of scientific workers, by I. G. Kochergin and A. M. Shishova
The resolution of the All-Union Conference of Philosophical Problems Concerning the Physiology of Higher Nervous Activity and Psychology, May 62
Morbidity among children in Tbilisi, by V. M. Tsabadze
I. I. Mechnikov and the Odessa bacteriological station, by R. I. Belkin.

Aoki, Hideo.
ON NOISES IN THE WORKROOMS AND THE HEARING POWER OF EMPLOYEES IN THE TELEPHONE AND TELEGRAPH OFFICE OF THE CITY OF NAGANO. [1962] 20p. 15 refs.
Order from SLA $1.60 62-16602

Trans. of Teishin Igaku (Japan) 1954, v. 6, no. 12, p. 953-959.

DESCRIPTORS: *Noise, *Hearing, Personnel, *Telephone communication systems, Telegraph systems, *Auditory perception, Industrial medicine.

Effert, S., Hertz, C. H., and Bohme, W.
DIRECT RECORDING OF ULTRASONIC CARDIOGRAMS WITH THE ELECTROCARDIOGRAPH. [1962] [17]p. (foreign text included).
Order from SLA $1.60 62-18251

Trans. of Z[eitschrift] fUr Kreislaufforsch[ung] (West Germany) 1959, v. 48, p. 230-236.

DESCRIPTORS: *Medical equipment, *Electrocardiography, *Ultrasonic equipment, *Recording devices, Crystal oscillators.

The ultrasonic cardiograph consists of the recording of displacement-time curves of certain heart wall-sections through periodic measurement of the ultrasonic pulse time from the sonic generator to the reflecting heart wall and back. By electronic methods, these pulse time values can be converted into voltage values and these recorded with a direct writing tip. By application of a direct recorder, the ultrasonic cardiogram is therefore produced for evaluation immediately following the recording. The technical details are described and the clinical results presented in a single example. Thru the application of a piezoelectric barium-titanium oscillator in place of a quartz oscillator, the sphere of application of the method can be expanded. The acoustical data for the sonic heads used and frequencies are represented in tables. (Author)

Hagino, Shozo.
STUDIES ON HEARING DISORDERS IN TELEPHONE OPERATORS. [1962] 31p. 54 refs.
Order from SLA $3.60 62-14818

Trans. of [Nihon Jibi Inkoka Gakkai Kaiho] (Japan) 1960, v. 63, no. 1, p. 109-121.

DESCRIPTORS: *Hearing, Deafness, Speech, *Noise, *Auditory perception, Pitch discrimination, Personnel, *Telephone communication systems, Telephone receivers, Industrial medicine.

Kassatsier, M. Ya.
METHODS OF GENERALIZING REPORTED DATA ON POPULATION MORBIDITY. 17 Dec 62 [14]p.
JPRS: 16724.
Order from OTS or SLA $1.60 63-13512

Trans. of Zdravookhranenie Rossiiskoi Federatsii (USSR) 1962 [v. 6] no. 9, p. 44-48.

DESCRIPTORS: Medical research, *Diseases, *Population, Reports, *Statistical data, Tables.

A summary table method is proposed which would provide an effective tool in studies concerning the dynamics of morbidity in urban areas.

Kuiper, J., Dekker, E., and During, J.
A METHOD FOR ANALYZING THE FREQUENCIES OF RESPIRATORY SOUNDS, AND ITS APPLICATION TO ASTHMATIC PATIENTS (Een Methode voor de Frequentie-Analyse van Ademhalingsgeluiden en de Toepassing Hiervan bij Astma-Patiënten). [1962] 11p. (figs. omitted) 7 refs.
Order from SLA $1.60 62-18280

Trans. of Ned[erlands] T[ijdschrift voor] Geneesk[unde] 1958, v. 102, no. 6, p. 274-278.

DESCRIPTORS: *Respiration, *Sound, *Frequency analyzers, *Asthma, *Oscillographs, Spectrographic analysis, Medical equipment.

A description is given of a method for analyzing respiratory sounds and abnormal sounds on the basis of frequencies. Use is made of a wave analyzer and a cathode-ray oscillograph with photographic registration. The spectrogram produced shows the time, on the abscissa and the frequency on the ordinate. The intensity of the luminous point on the oscilloscope screen, i.e. the blackening on the photograph, is a measure of the amplitude of the sound at the frequency in question. The three variables of the sound are shown in one single graph. The advantages of this method are discussed, and examples are given of spectrograms of the respiratory sounds obtained from normal control individuals as well as from asthmatic patients. (Author)

Natta, Antonio.
IMPROVEMENTS IN NEEDLE BLOCKING DEVICES FOR MEDICAL SYRINGES WITH RINGS, WITH HANDLE, AND THE ORDINARY TYPES, tr. by G. E. 10 Aug 62, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-32921

Trans. of Italian patent 363,380, cl. XII, appl. 27 June 38, granted 4 Oct 38, printed Feb 39.

DESCRIPTORS: *Medical equipment, *Syringes, Drugs, Injectors (Medicine)

Microbiology

Erusalimskii, N. D.
ON THE LAWS OF GROWTH AND DEVELOPMENT OF MICROORGANISMS. [1962] [33]p. 26 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R37. When supply is exhausted, order from OTS or SLA $3.60, 62-18851

Trans. of A[kademiya] N[auk] SSSR. Institut Mikrobiologii. Trudy, 1959, v. 6, p. 20-37.

DESCRIPTORS: *Microorganisms, *Bacteria, Growth, Reproduction, Mathematical analysis, *Culture media, Population, Control, *Germ-free atmospheres.

The most important indices of growth of microbe cultures in stationary and circulating media were examined and formulas were adduced for the calculation of

the growth rate, the size of the biological mass of the culture, and the duration of a generation. A characterization of the development of separate microbe individuals and entire populations (cultures) was given, as well as the interrelation between growth and development. The stagewise character and the irreversibility of the process of development were shown in the case of sporulation in bacteria. By regulating the environmental conditions one may control the growth and development of microorganisms. (Author)

Macura, Jiri and Kotkova, Miluse.
GROWTH CYCLE OF AZOBACTER IN A STREAM HABITAT (Vyvoj Azobaktera v Proudicim Prostredi) tr. by Vedral. [1962] 15p. (illus. omitted) 34 refs. H 7438.
Order from OTS or SLA $1.60 62-25258

Trans. of Ceskoslovenska Biologie, 1953 [v. 2] no. 1, p. 41-49.

DESCRIPTORS: Growth, *Azotobacter, *Culture media, Morphology, Nitrogen, Glucose, Metabolism.

Lycheva, S. I.
WORK OF THE MOSCOW DEPARTMENT OF THE ALL-UNION MICROBIOLOGY SOCIETY IN 1962.
10 Dec 62 [6]p. JPRS: 16603.
Order from OTS or SLA $1.10 63-13469

Trans. of #Mikrobiologiya (USSR) 1962 [v. 31] no. 4, p. 764-766.

DESCRIPTORS: *Microorganisms, Symposia, Scientific research, Reports.

Listings are given of the titles of papers presented at the 17 conferences conducted by the department during 1961.

Zhukov-Verezhnikov, N., Yakolev. V., and Maiskii, I.
MEANS TO DEVELOP SPACE MICROBIOLOGY.
15 May 62 [9]p. FTD-TT-62-600; AD-277 649.
Order from OTS or SLA $1.10 62-25853

Unedited rough draft trans. of [Russian] newspaper article from an unidentified source, n.d.

DESCRIPTORS: *Microbiology, Space environmental conditions, *Space medicine, Satellite vehicle research, Sanitary engineering, Satellite vehicles, Biology.

Pathology

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 28 (BIOLOGY AND MEDICINE SERIES). 20 Dec 62 [25]p. JPRS: 16800.
Order from OTS or SLA $2.60 63-13453

Consists of abstracts of articles from the East European scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, *Hungary, *Veterinary medicine, Surgery, *Communicable diseases, Anatomy, Mammals, *Vaccines, *Parasitic infections, Man, Mycobacterium, Drugs, *Skin, *Diseases, Cancer, Nephritis, *Abnormal psychology, Children, *Staphylococcus, Therapy, Injuries, *Radiation sickness, Hemoglobin.

HERALD OF SURGERY, 1962, VOL. 89, NO. 10: SELECTED ARTICLES. 5 Dec 62 [28]p. (figs. omitted) 7 refs. JPRS: 16530.
Order from OTS or SLA $2.60 63-13499

Trans. of Vestnik Khirurgii (USSR) 1962, v. 89, no. 10, p. 34-37 and 53-72.

DESCRIPTORS: *Surgery, Dacron, *Plastic surgery, *Expanded plastics, Phosphorus.

Contents:
Treatment of superficial acute inflammatory processes with radioactive phosphorus applications, by K. I. Myshkin
The characteristic features of lavsan as an alloplastic material, by D. P. Chukhrienko
Soft elastic porous polymers as plastic material in surgery, by A. G. Gubanov and others.

MEDICAL SCIENCES OF THE USSR. 28 Dec 62 [72]p. JPRS: 16899.
Order from OTS or SLA $7.60 63-13654

Trans. of Priroda (USSR) 1962 [v. 51] no. 9, p. 32-49 and [89-91].

DESCRIPTORS: Medicine, *Cancer, *Conditioned reflex, *Genetics, *Nervous system, Brain, Spinal cord, Molecules, *Nucleic acids.

Contents:
Attack on cancer, by N. N. Blokhin
Conditioned reflex and related phenomena, by E. A. Asratyan
Evolution of the higher nervous activity and psychics, by D. A. Biryukov
Molecules of life, by A. S. Kriviskii.

PATHOLOGICAL PHYSIOLOGY AND EXPERIMENTAL THERAPY, 1962, VOL. 6, NO. 3: SELECTED ARTICLES. 16 Nov 62 [73]p. 243 refs. JPRS: 16215.
Order from OTS or SLA $7.60 63-13355

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1962, v. 6, no. 3, p. 3-17, 37-40, 49-52, 57-67, 69-70, 85-93.

DESCRIPTORS: Pathology, Physiology, *Therapy, *Blood vessels, Permeability, Kidneys, *Decompression sickness, Radiation effects, *Body fluids, *Radia-

tion sickness, Leukocytes, Blood transfusions, *Nucleoproteins, Immunology, *Tolerances (Physiology), *Burns.

Contents:
Problems of the physiology and pathology of vascular permeability, by I. A. Oivin
Permeability changes of biological barriers from the) effect of different pathogenic factors, by N. N. Zaiko
The significance of hyperthermia in the development of burn shock in experiments, by N. I. Kochetygov
The possibility of using a cadaver lung as a dialyzing system for renal insufficiency instead of an artificial kidney, by A. N. Filatov and others
The effect of low ambient temperature on the occurrence of decompression sickness, by V. A. Aver'yanov
The role of humoral mechanisms in the development of radiation changes in salivary glands, by A. A. Prokhonchukov and V. V. Panikarovskii
Changes of the leucocyte reactions in radiation sickness in decorticate animals, by P. V. Simonov and O. V. Shnyrenkova
Pressor and respiratory reactions of irradiated rats to the intravenous injection of homologous and heterologous blood, by R. F. Yurin
Nucleoproteins and biological specificity, by I. M. Neiman
Problems of immunological tolerance, by E. A. Zotikov
Conference on the burn problem (no. 2) Leningrad, 1961, by E. V. Cubler and N. I. Kochetygov.

PATHOLOGICAL PHYSIOLOGY AND EXPERIMENTAL THERAPY, 1962, VOL. 6, NO. 4: [SELECTED] TRANSLATIONS. 4 Dec 62 [45]p. 45 refs. JPRS: 16504.
Order from OTS or SLA $4.60 63-13274

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1962, v. 6, no. 4, p. 18-37 and 89-92.
##Another trans. of (p. 89-91) is available from OTS or SLA $1.60 in 62-33426, JPRS-15695, 15 Oct 62 [14]p.

DESCRIPTORS: *Pathology, *Physiology, *Therapy, Brain, *Tissues (Biology), Oxygen, *Nervous system, *Adrenal glands, Nitrogen, Adaptation (Physiology), *Anoxia, Metabolism, Shock (Physiology), *Burns, *Transplantation.

Contents:
Change of oxygen pressure in the brain tissue of dogs in rarefied atmosphere, by E. A. Kovlenko
The role of the central nervous system and of the adrenal glands in adaptive reactions in anoxemia (oxygen want) by B. V. B. Antonov and V. A. Puklov
The effect of immunotherapy on nitrogen metabolism in dogs with thermic burn, by N. A. Fedorov and V. V. L'vova
The complex therapy of burn shock, by G. Sh. Vasadze and T. E. Kudritskaya
##All-Union Conference on Hemotransplantation of Organs and Tissues (no. 2) by E. A. Zotikov.

RECENT MEDICAL ADVANCES IN THE USSR. 6 June 62 [32]p. 37 refs. JPRS: 14019.
Order from OTS or SLA $3.60 62-25045

Trans. of Sovetskaya Meditsina (USSR) 1962, v. 25, no. 3, p. 3-8, 113-117.

DESCRIPTORS: Diseases, *Genetics, *Geography, *Therapy, *Bile, Drugs, Pharmacology.

Contents:
Some aspects of the geographic distribution of hereditary diseases of man, by N. P. Sokolov
Treatment of some diseases of the soft tissues, joints, and spinal column with biliarin (medically preserved bile) by M. N. Livshits and V. P. Voronina
Aralia: a new stimulant and tonic, by B. T. Komissarenko.

THE USE OF RADIATION THERAPY. 14 Dec 62 [18]p. JPRS: 16682.
Order from OTS or SLA $1.60 63-13534

Trans. of Meditsinskaya Radiologiya (USSR) 1962 [v. 7] no. 9, p. 62-70 and 81-83.

DESCRIPTORS: *Therapy, Ionization, X-rays, *Diseases, *Brain, *Spinal cord, Symposia.

Contents:
Radiation therapy in nervous diseases, by M. D. Gal'perin
Recommendations of the Symposium on Problems of Radiation Therapy of Non-tumorous Diseases.

Abrakov, L. V., Vvedenskaya, I. V., and Dil'man, V. M.
ON THE MECHANISM GOVERNING MASSIVE CHANGES IN THE BIOELECTRIC ACTIVITY IN METASTATIC BRAIN TUMORS. 20 Nov 62 [13]p. 16 refs. JPRS: 16278.
Order from OTS or SLA $1.60 63-13304

Trans. of Voprosy Neirokhirurgii (USSR) 1962 [v. 26] no. 5, p. 35-40.

DESCRIPTORS: Bioelectronics, *Electroencephalography, *Brain, *Neoplasms, *Diagnosis, Pathology, Thalamus, Secretion, Pituitary hormones, Cholesterol, Hypothalamus.

Observation was made of a group of patients who had malignant tumors of varying localization, but no metastatic focus in the brain. For almost all the patients, the EEG registered deviations--in the form of surges of distributed synchronous activity or general desynchronization. Some of the patients exhibited distinct signs of an increase in hypothalamo-hypophysial activity: intensified secretion of total gonadotropin with the ovarian cycle remaining intact in individual patients with cancer of the mammary gland, a high cholesterol level in the blood. The significant increase in cholesterol content of the blood and the absence of the pathological conditions which normally accompany this phenomenon are regarded as a characteristic indicator of

diencephalic pathology and increased activity in the hypothalamic centers. The correspondence of the EEG data with the endocrinological data permits the conclusion that, up until the appearance of metastasis, the brain of a malignant tumor patient exhibits signs of dysfunction in the median structures. In our opinion, the above principles may be used as a starting point in interpreting EEG data on patients with metastatic brain tumors. (Author)

Aksenova, N. N., Bresler, V. M. and others.
JOINT SCIENTIFIC SESSION ON PROBLEMS OF THE BIOLOGICAL PRINCIPLES OF MALIGNANT GROWTH (Ob'edinennaya Nauchnaya Sessiya po Problemam Biologicheskikh Osnov Zlokachestvennogo Rosta). 20 Sep 62, 12p. Trans. A-1362.
Order from OTS or SLA $1.60 62-33225

Trans. of Tsitologiya (USSR) 1962, v. 4, no. 3, p. 370-373.

DESCRIPTORS: Biology, Growth, *Cancer.

Aleksandrov, N. I. and Gefen, N. E.
ACTIVE SPECIFIC PROPHYLAXIS OF INFECTIOUS DISEASES AND ITS IMPROVEMENT. 20 Dec 62 [391]p. (figs. omitted). JPRS: 16793.
Order from OTS or SLA $21.00 63-15082

Trans. of mono. Aktivnaya Spetsificheskaya Profilaktika Infektsionnykh Zabolevanii i Puti Ee Usovershenstvovaniya, Moscow, 1962.

DESCRIPTORS: *Communicable diseases, Antigens, Antibodies, *Immunization, Immunology, *Vaccines, *Diseases, Man, Animals, *Gastrointestinal system, *Rickettsia, *Anaerobiology, Inhalation immunization.

The book consists of four parts. In the first part the general principles of specific prophylaxis of infectious diseases are presented. In the second and third parts specific data are given on specific prophylaxis of various infectious diseases. In the fourth part the authors consider physiological (enteral, intranasal and inhalational) methods of vaccination and present the results of the authors studies with the use of these methods. The group of infectious diseases discussed is broad and includes the majority of diseases which have a tendency toward considerable dissemination under particularly unfavorable conditions (for example, war). Methods of specific prophylaxis of intestinal diseases (typhoid fever, paratyphoids, dysentery and cholera), anaerobic diseases (tetanus, gas gangrene, botulism), zoonotic diseases (anthrax, plague, tularemia, brucellosis), rickettsial diseases (epidemic typhus and others) and diphtheria are presented. (Foreword)

Bunin, K. V.
EARLY DIFFERENTIAL DIAGNOSIS OF INFECTIOUS DISEASES: SELECTED PORTIONS. 23 Nov 62 [193]p. (figs. omitted) 38 refs. JPRS: 16317.
Order from OTS or SLA $13.50 63-13262

Trans. of mono. Rannyaya Differentsial'naya Diagnostika Infektsionnykh Boleznei, Moscow, 1960, p. 3-34, 84-95, 142-163, 171-249, 255-276, 322-323, 333-344, 352, 368-386, 420-421.

DESCRIPTORS: *Diagnosis, *Infections, *Diseases, Pathology, *Bacteria, Rabies, Brucellosis, Melioidosis, Anthrax, Plague, Foot-and-mouth disease, *Parasitic infections, Blood, Insects, Typhus fever, Rickettsia, Q fever, Encephalitis, Spirochetosis, *Pneumococcus, Pneumonia, Diphtheria, Smallpox, Coccidioides, *Fevers, *Virus diseases.

Contents:
Foreword
Fundamentals of diagnosis and semiotics of infectious diseases
Zoonotic infectious diseases rabies (hydrophobia, rabies, lyssa)
Arthropod-borne (blood) infectious diseases
Pneumococcal meningitis
Basic bibliography.

Carreno, F. B.
NOISE IN PLANTS AND WORKSHOPS. [1962] 8p.
Order from SLA $1.10 62-16804

Trans. of Psicotecnia (Spain) 1944/45, v. 5, p. 103-114.

DESCRIPTORS: *Noise, *Industrial plants, Industrial medicine, *Hearing, Ear *Deafness, Inhibition, Acoustic insulation, Medical equipment.

Cotte, G., Martin, J. F., and Mileff, Cl.
ABOUT A CASE OF MIXED TUMOR OF THE UTERINE BODY (Sur un Cas de Tumeur Mixte du Corps Uterin). [1962] 9p. (5 figs. omitted).
Order from SLA $1.10 62-10585

Trans. of Revue Francaise de Gynecologie et d'Obsterique, 1942, v. 37, Feb. p. 51-61.

DESCRIPTORS: *Cancer, *Tumors, *Uterus, Sarcoma, Cells (Biology), *Morphology, Etiology.

Florea, L.
THE RUMANIAN INFRAMICROBIOLOGY INSTITUTE. 3 Jan 62 [6]p. JPRS: 16945.
Order from OTS or SLA $1.10 63-13674

Trans. of Muncitorul Sanitar (Rumania) 1962 [v. 13, no. 47 (599)] 24 Nov, p. 3.

DESCRIPTORS: Scientific research, *Virus diseases, Scientific organizations, Medical research.

A brief description is given of the Institutes physical plant and its current research projects in virology.

Löfgren, Sven.
ETIOLOGY AND PATHOGENESIS OF ERYTHEMA NODOSUM AND ERYTHEMA INDURATUM. 12 Apr 52, 5p. (figs. omitted).
Order from SLA $1.10 62-18446

Trans. of Nordisk Medicin (Sweden) 1951 [v. 46, no. 27] p. 1069-1072.

DESCRIPTORS: *Etiology, Pathology, *Tuberculosis, *Ulcers, *Diagnosis, Skin.

Malizia, E. and Svihla, G.
MICROPHOTOGRAPHY BY ULTRAVIOLET RAYS WITH A TRANSPOSITION OF COLOR IN THE STUDY OF GLOMERULAR PATHOLOGY. [1962] 6p. 6 refs.
Order from SLA $1.10 62-18291

Trans. of Societa Italiana di Biologia Sperimentale. Bollettino, 1955, v. 31, no. [9]/10 [p. 1261-1263].

DESCRIPTORS: *Microphotography, *Ultraviolet radiation, Colors, Diagnosis, *Nephritis, Kidneys, Ultraviolet spectrophotometers.

Pampus, F. and Thelen, M. E.
DISTURBANCES OF BLOOD COAGULATION AND ALTERNATIONS OF BLOOD PROTHROMBIN LEVEL IN ACUTE DISEASES OF THE BRAIN, FOLLOWING HEAD INJURIES AND BRAIN OPERATIONS. [1962] 11p (figs. refs. omitted).
Order form SLA $1.60 62-16220

Trans. of Zentralblatt für Neurochirurgie (East Germany) 1960, v. 20 [no. 5] p. 257-266.

DESCRIPTORS: *Blood coagulation, Prothrombin, *Brain, *Injuries, *Surgery, Blood platelets.

Parnes, V. A.
THE IMMUNOLOGY OF LEUCOSIS: INTRODUCTION AND CHAPS. 1-5 (CONCLUSIONS). 9 Feb 62 [11]p. JPRS: 12420.
Order from OTS or SLA $1.60 62-15953

Trans. of mono. [Immunologiya Leikosa] Moscow, 1960, p. 3-6, 43-44, 95, 118-119, 192-194, 215-216.
Another trans. without introduction is available from OTS or SLA $1.10 as 61-28909, JPRS-10447, 9 Oct 61 [9]p.

DESCRIPTORS: *Leukemia, *Lymphocytes, *Immunology, *Antibodies, *Antigens, *Anaphylaxis, *Sensitization, Viruses, *Birds, *Animals, *Virus vaccines, *Etiology, Immunity, *Virus diseases.

For chapter headings see Technical Translations 7: 192, 1962.

Pommatau [E.] and Bail, C.
THE NICOTINE TEST IN POLYURIA AND POLYDIPSIA SYNDROMES. [1962] 17p.
Order from K-H $21.25 K-H 8599-b

Trans. of Lyon Médical (France) 1958 [v. 200] no. 39, p. 385-406.

DESCRIPTORS: *Nicotine, Tests, *Urine, *Excretion, *Thirst, Diseases.

Raushenbach, M. O., Zharova, E. I. and others.
LEUKEMOGENIC AND BLASTOMOGENIC PROPERTIES OF SOME METABOLITES OF TRYPTOPHAN. [1962] 10p. 23 refs.
Order from OTS or SLA $1.10 62-18174

Trans. of #Problemy Gemotologii i Perelivaniya Krovi (USSR) 1961, v. 6 [no. 10] p. 3-8.

DESCRIPTORS: *Leukemia, Etiology, Cells (Biology), *Cancer, Embryoes, Metabolism, *Tryptophan.

Rodionov, V. M. and Baroyan, O. V.
BIOCHEMICAL MECHANISMS OF RADIATION SICKNESS [AND] THE PROBLEM OF SCIENTIFICALLY SUBSTANTIATING THE DEGREE OF EPIDEMIOLOGICAL EFFECTIVENESS OF VARIOUS VACCINES. 20 Dec 62 [33]p. 102 refs. JPRS: 16772.
Order from OTS or SLA $3.60 63-13489

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 9, p. 48-58 and 76-84.

DESCRIPTORS: Biochemistry, *Radiation sickness, *Radiobiology, Epidemiology, Effectiveness, Communicable diseases, *Vaccines.

Schwartz, Daniel and Denoix, Pierre F.
FRENCH INVESTIGATION OF THE ETIOLOGY OF BRONCHO-PULMONARY CANCER: ROLE OF TOBACCO. [1962] 18p.
Order from K-H $22.50 K-H 6871 d
Partial trans. of Semaine des Hôpitaux de Paris (France) 1957, v. 33, no. 62/67 [p. 3630-3643].

DESCRIPTORS: Etiology, *Cancer, *Lungs, *Tobacco, Smokes, Cigarettes.

Shilov, Pavel Ivanovich and Pilyushin, Petr Viktorovich.
SOME PROBLEMS IN TREATING BURNS AND BURN COMPLICATIONS. 29 Nov 62 [43]p. JPRS: 16422.
Order from OTS or SLA $4.60 63-13335

Trans. of mono. Vnutrennyaya Patologiya pri Ozhogakh (Termicheskikh) (Internal Pathology of Burns (Thermal)) Leningrad, 1962, chap. 10, p. 249-275.

DESCRIPTORS: *Burns, Therapy, Shock (Pathology), *Diet, *Vitamins, Pathology, Anemia, Cardiovascular system, Pneumonia.

Several recurrent problems in the general treatment of burn patients diet therapy, vitamin therapy and the treatment of certain burn complications are discussed.

Sokolovskii, V. P. and Paramonova, E. G.
CONFERENCE ON THE PROBLEM OF ATHEROSCLEROSIS, HELD IN LENINGRAD, 21-26 MAY 62. 7 Dec 62 [8]p. JPRS: 16554.
Order from OTS or SLA $1.10 63-13523

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962 [v. 17] no. 10, p. 89-92.

DESCRIPTORS: *Arteriosclerosis, Symposia, Diseases, Conferences.

Brief abstracts of papers concerning the morphology and morphogenesis of atherosclerosis, experimental atherosclerosis, the biochemistry of atherosclerosis and clinical atherosclerosis.

Tsurupa, D. I., Milashkin, A. G., and Estrin, G. B.
THE USE OF ULTRASOUND IN DIAGNOSING SOME SURGICAL ILLNESSES [AND] THE SCIENTIFIC SESSION OF THE NIIEKhAiL. 27 Dec 62 [18]p. JPRS: 16868.
Order from OTS or SLA $1.60 63-13634

Trans. of Vestnik Khirurgii (USSR) 1962, v. 89, no. 9, p. 63-69 and 147-149.

DESCRIPTORS: *Ultrasonic radiation, Diagnosis, Surgery, *Tumors, *Surgical instruments, Medical equipment.

Experience in the use of ultrasonic equipment has shown that it can be used to determine the size and depth of a tumor and its relation to the surrounding tissue, and to detect the presence of liquid containing tumors. (Tsurupa) Summaries are given of a number of papers concerned with the design of surgical instruments and equipment (Milashkin and Estrin)

Wittekind, D. and Struder, R.
CONTRIBUTION ON THE HISTOGENESIS OF BRONCHIAL CARCINOMA. II. THE RELATION BETWEEN EPITHELIAL METAPLASIAS AND CARCINOMA FORMATION IN THE BRONCHIAL TREE. [1962] 53p.
Order from K-H $66.25 K-H 9614

Trans. of Frankfurter Zeitschrift für Pathologie (West Germany) 1953, v. 64, p. 405-437.

DESCRIPTORS: Histology, *Etiology, *Cancer, *Lungs, *Epithelium, Pathology.

Ziserman, V. E.
CHANGES IN THE FUNGAL FLORA OF MOSCOW OVER A 15-YEAR PERIOD. 3 Dec 62 [6]p. JPRS: 16470.
Order from OTS or SLA $1.10 63-13283

Trans. of Vestnik Dermatologii i Venerologii (USSR) 1962, v. 36, no. 10, p. 63-66.

DESCRIPTORS: *Fungi, *Skin, *Diseases, Epidemiology, *Actinomycetes, Fungus infections.

This is a statistical analysis of the types of fungi causing dermatitis in Moscow from 1945 to 1960. The number of cases and the organisms found by culturing to be the cause of the infection are tabulated to show the changes in fungal flora during this period.

Zotov, A. P.
AFRICAN PLAGUE OF THE SOLID-UNGULATES (Afrikanskaya Chuma Odnokopytnykh). 16 Aug 62, 22p. Trans. V-1793.
Order from OTS or SLA $2.60 62-32594

Trans. of Veterinariya (USSR) 1962, v. 39, no. 5, p. 65-72.

DESCRIPTORS: *Virus diseases, *Horses, *Epidemiology, Ungulates, Disease carriers, Mosquitoes, Inhibition, Immunization

Pharmacology and Toxicology

CORTICALIN AND ITS EFFECT UPON NORMAL ANIMALS. [1962] [66]p. 50 refs.
Order from OTS or SLA $6.60 62-16000

Trans. of unidentified Russian mono. issued by Acad. of Sci. of the Ukr. SSR. Inst. Clin. Physiol., 1943, p. 132-178.

DESCRIPTORS: *Adrenal cortical extract, Drugs, Pharmacology, *Diabetes, Hyperglycemia, Pituitary gland, *Carbohydrates, *Proteins, *Metabolism, Hypoglycemia, Hormones.

Busch, W. and Engelmeier, M.-P.
DORIDEN INTOXICATION. [1962] 8p.
Order from SLA $1.10 62-18175

Trans. of [der] Nervenarzt (Germany) 1959, v. 30, p. 516-518.

DESCRIPTORS: *Drugs, *Doriden, *Toxicity, Emotions, Reactions (Psychology).

Butt, H.
A CASUISTIC CONTRIBUTION TO THE TREATMENT OF A CASE OF PULMONARY SARCOIDOSIS WITH 9 ALPHA-FLUOR-16 ALPHA-HYDROXY-PREDNISOLONE (DELPHICORT). [1962] 5p. (refs. omitted).
Order from SLA $1.10 62-16215

Trans. of Wien[er] Med[izinische] W[ochen]schr[ift] (Austria) 1960, v. 110 [no. 38] p. 791-792.

DESCRIPTORS: *Diseases, *Lungs, *Tuberculosis, *Drugs, Diagnosis, Corcicosteroids

Carranza Acevedo, Jose.
AFFECTING BY AID OF SULFAMETHOXYPYRIDAZINE THE FREQUENCY OF EPILEPTIC ATTACKS WHICH ARE INDUCED BY INTERCURRENT INFECTIONS. [1962] 8p. (2 formulas 4 tables 87 refs. omitted).
Order from SLA $1.10 62-10272

Trans. of mono. (doctoral thesis) presented to the Faculty of Medicine, University of Mexico, n.d.

DESCRIPTORS: Drugs, Therapy, *Convulsions, *Epilepsy, *Infections, *Sulfonamides, Inhibition.

The action of Sulfamethoxypyridazine as prophylactic was studied for comvulsive attacks which are induced by infectious processes, in 43 epileptic children which otherwise were under control by the use of the commonly employed anticonvulsants. A "triple blind technique" was employed, in which half of the children received a placebo, and the other half sulfamethoxypyridazine in prophylactical doses. A significant reduction of the number of seizures was brought about in the group which received sulfamethoxypyridazine (p = 0.001 and 0.01). In the group which received the placebo also a decrease of the number of seizures was noted, what possibly is due to an epidemilogical effect. During the whole time of the study no toxic effect was noted of the sulfamethoxypyridazine. The employ over larger periods of time in prophylactic doses is discussed. A review is presented of the employment of this drug for various infections and the toxicity encountered by other authors. (Author)

Cukier, J.
CUTANEOUS HAZARD OF VASOPRESSORS: COMPARATIVE EXPERIMENTAL STUDY OF NOREPINEPHRINE AND HYPERTENSIN (Le Risque Cutané des Vaso-Presseurs: Etude Expérimentale Comparative de la Noradrénaline et de l'Hypertensine). Jan 61 [7]p.
Order from SLA $1.10 62-14319

Trans. of J[ournal de] Chirurgie (France) 1961, v. 82, [no. 1/2] p. 41-46.

DESCRIPTORS: *Skin, *Necrosis, Injection, Vasomotor drugs, *Hypertensin, *Levarterenol, Epinephrine.

Desaulles, P. A. and Krähenbühl, Ch.
COMPARISON OF THE SPECTRUM OF ACTIVITY OF CERTAIN SYNTHETIC GESTAGENS (EXPERIMENTAL STUDY) (Comparaison du Spectre d'Active de Certains Gestagenes de Synthese (Etude Experimentale). [1962] [15]p. 37 refs.
Order from SLA $1.60 62-16905

Trans. of Acta Endocrinologica (Denmark) 1962, v. 40, p. 217-231.

DESCRIPTORS: *Drugs, Pharmacology, *Progesterone, *Testosterone, *Androgens, Steroids, *Pituitary hormones, Pregnancy.

Grilli, H.
GLUTETHIMIDE AND PROTHROMBIN TIME: ITS USE IN ANTICOAGULANT THERAPY (Gluthetimida y Tiempo de Protrombina su Aplicacion en la Terapeutica Anticoagulante). May 62, 7p. 30 refs.
Order from SLA $1.10 62-16903

Trans. of la Prensa Med[ica] Arg[entina] 1959, v. 46, p. 2867-2869.

DESCRIPTORS: *Doriden, Drugs, *Prothrombin, Blood coagulation, Inhibition, *Hypnotics and sedatives.

25 patients under anticoagulant therapy for various conditions were given glutethimide, a non-barbiturate hypnotic. The hypnotic action was effective in 100% of the cases without any definite side effects. Because of persistent insomnia, all the patients had received barbiturates which invariably reduced the prothrombin time to values invalidating the therapeutic and prophylactic action of anticoagulants. On treatment with glutethimide, the prothrombin time remained unchanged in 8 cases for more than 2 months and in the other 17 patients the changes were minimal and less than 10% of the original level, which permits the action of anticoagulants to continue unchanged. (Author)

Heusghem, C., Versie, R., and Warin, J.
A CASE OF GLUTETHIMIDE INTOXICATION (DORIDEN) (Un Cas d'Intoxication par le Glutéthimide (N. D. Doridene)). [1962] 4p. 14 refs.
Order from SLA $1.10 62-16010

Trans. of Ann[ales de] Méd[ecine] Leg[ale] (France) 1959, v. 39 [no. 6] p. 535-537.

DESCRIPTORS: Drugs, *Toxicity, *Poisoning, Hypnotics and sedatives, *Doriden.

Kleinsorge, H. and Gaida, P.
BEHAVIOR OF THE SERUM LEVEL AFTER INTRAVENOUS INJECTION OF AJMALINE (Das Verhalten des Serumspiegels nach Intravenöser Injektion von Ajmalin). [1962] 7p. 7 refs.
Order from SLA $1.10 62-18179

Trans. of Klin[ische] W[ochen]schr[ift] (Germany) 1962, v. 40 [no. 3] p. 149-151.

DESCRIPTORS: *Drugs, Rauwofia alkaloids, *Ajmaline, *Absorption, Blood, Serum, Pharmacology, *Excretion.

By means of a modified method we measured the serum ajmaline level after i. v. injection in 21 voluntary experimental persons and after i. m. injection in 12. It was found that ajmaline disappears very rapidly from the circulation. On the average after i. v. administration we found less than 10% after 1 min., about 2. 5% after 5 min. and about 0. 5% after 30 min. of the quantity given. The serum level studies after i. m. injection show results which are not uniform. In 9 of 12 cases ajmaline was not found in the serum at any time, in 2 experimental persons about 0. 4% of the dose was found 20 min. after injection, one experimental person showed a slight rise of the serum level (maximum less than 0. 5% of the dose). We can assume that even quantities smaller than 0. 5% of ajmaline in 10 ml. serum exert and effect on arrhythmias, whereas larger quantities in addition broaden the QRS complexes. (Author)

Lautier, Charles.
HISTORY OF MENTHOL. [1962] 7p.
Order from K-H $8.75 K-H 9915-b

Trans. of Parfumerie Moderne (France) 1923, v. 16, Nov, p. 260-262.

DESCRIPTORS: *Drugs, History.

Levritz, M. J., Capron, C. and others.
FAVORABLE ACTION OF 19-NORANDROSTENOLONE PHENYL PROPIONATE IN WOMEN PATIENTS WITH SENILE DEMENTIA (Action Favorable du Phényl-Propionate de 19-Nor-Androsténolone chez les Malades Attientes de Démence de la Sénilité). Jan 62, 1p.
Order from SLA $1. 10 62-14324

Trans. of [la] Presse Med[icale] (France) 1961, v. 69 [no. 47] p. 2096.

DESCRIPTORS: *Drugs, Therapy, *Mental diseases, Age.

19-Nor-androstenolone phenyl propionate or Durabolin is a hormone with marked anabolic action, without any virilizing effect in therapeutic doses. This trial was conducted on 37 patients with senile dementia, in whom previous symptomatic therapy had been ineffective. Prolonged administration of PPNA, i. e., for 10 weeks, incontestably caused a general improvement, proven objectively by a rapid weight gain, normalization of the blood proteins and a favorable effect on disturbances in feeding and behavior. *(Report quoted in its entirety) (Author)

Mariani, L., Breda, G., and Villani, R.
RESERPINE AND EXPERIMENTAL ANURIA CAUSED BY SEROTONIN (Reserpina ed Anuria Sperimentale di Origine Serotoninica). [1962] 6p. 6 refs.
Order from SLA $1. 10 62-18178

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale], Boll[ettino] 1961, v. 37 [no. 14] p. 633-635.

DESCRIPTORS: Drugs, Pharmacology, *Urine, *Secretion, Inhibition, *Serotonin, *Reserpine, *Chlorpromazine.

Markin, A. P., Lukin, E. P. and others.
BOTULINUM TOXOID, TYPE C (Izuchenie Botulinovykh Anatoksinov. Soobshchenie III. Botulinovyi Anatoksin Tipa C). Communication 3 of Study of Botulinum Toxoids. 6 Feb 62, 9p. 12 refs. Trans. V-1765.
Order from OTS or SLA $1. 10 62-23287

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1961 [v. 32] no. 12, p. 96-99.

DESCRIPTORS: Preparation, *Botulism toxoid, Immunization

Matiar-Vahar, H. and Schilde, P.
CEREBRAL CONVULSIONS DURING GLUTETHIMIDE ABUSE (Zerebrale Krampfanfälle bei Glutethimid-Abusus). [1962] 7p. 18 refs.
Order from SLA $1. 10 62-16122

Trans. of D[eu]tsch[e] Med[izinische] W[ochen]schr[ift] (West Germany) 1962, v. 87 [no. 8] p. 406-408.

DESCRIPTORS: Drugs, Toxicity, *Convulsions, Glutaric acids, Amides, Hypnotics and sedatives, *Doriden

Glutethimide (Doriden) which has proven useful as a drug for falling asleep and staying asleep is preferred particularly by intellectuals because of the absence of after-effects. But in certain cases caution in the use of the drug seems advisable. Cases from the literature are discussed, in which cerebral convulsions occurred in connection with glutethiamide abuse. Whether we are dealing here only with withdrawal phenomena is not certain at all, in particular if we consider the fact that large doses taken for suicidal purposes can produce cerebral irritation with extensor spasms or convulsions. In 3 cases of our own with glutethimide abuse cerebral convulsions appeared at the height of abuse. We share the opinion of those who consider that glutethimide, like the other glutaric acid imide-derivatives thalidomide (Contergan) and Bemegrid (Eukraton), has a certain convulsion – promoting effect under certain conditions. Therefore administration of glutethimide requires observation of certain precautions. This drug also should be given under the physician's supervision. (Summary)

Milletti, Mario.
DEVICES CAPABLE OF DIMINISHING TOXICITY OF TOBACCO SMOKE AND TECHNIQUE OF THEIR EMPLOY. [1962] 15p.
Order from K-H $18.75 K-H 9929-c

Trans. of Chimica [Milan] (Italy) 1959, v. 35, no. 10, p. 589-594.

DESCRIPTORS: *Cigarettes, *Smokes, Tobacco, *Toxicity, Countermeasures, Instrumentation.

Milletti, Mario.
MEANS DIMINISHING TOXICITY OF TOBACCO SMOKE AND TECHNIQUE OF USING THEM. [1962] 24p.
Order from K-H $30.00 K-H 9929-b

Trans. of Chimica [Milan] (Italy) 1959, v. 35, no. 5, p. 333-340.

DESCRIPTORS: *Tobacco, *Smokes, Cigarettes, *Toxicity, Countermeasures.

Novacek, Alois, Stejskal, Frantisek, and Ulrich, Miroslav.
METHOD OF PREPARING 16α, 17α-EPOXY-Δ^5. PREGNEN-3β-ol-20-ONE. [1962] 3p.
Order from OTS or SLA $1.10 62-16485

Trans. of Czechoslovakian patent 96154, cl. 12 o, 25/05, appl. 9 Mar 59 (PV 1418-59) valid from 9 Mar 59, disclosed 15 Jan 60, pub. 15 July 60.

DESCRIPTORS: Preparation, *Pregnandiols, Steroids, *Drugs.

A method is patented for preparing 16α, 17α-epoxy-Δ^5-pregnen-3β-ol-20-one from the isolated crude product obtained from steroid sapogenins such as diosgenin by isomerization with acetic anhydride, oxidation with chromium trioxide and splitting off the side chain in position 16. The method is characterized in that the side chain in position 16 is split off by the action of an oxidizing agent in the medium of a saturated aliphatic alcohol with 1-3 carbon atoms, such as methanol, at a pH value greater than 7.

Remmer, H., Neuhaus, G., and Ibe, K.
RATE OF ELIMINATION OF GLUTETHIMIDE (DORIDEN) IN MAN (Die Eliminationsgeschwindigkeit von Glutethimide (Doriden) beim Menschen). [1962] 7p. 5 refs.
Order from SLA $1.10 62-18176

Trans. of Naunyn-Schmiedeberg's Arch[iv für] Exp[erimentelle] Path[ologie] u[nd] Pharmak[ologie] (West Germany) 1961, v. 242, p. 90-95.

DESCRIPTORS: Drugs, *Doriden, *Excretion, Narcotics, *Toxicity, Dosage, Pharmacology, *Mathematical analysis.

A method is described for determining the rate of elimination of narcotics in man based on the evaluation of the relation of dose taken and duration of action. It can be used only if a great number of intoxications are treated in a center where artificial respiration is possible. The elimination of Doriden amounts to 25% daily and is considerably slower than has been concluded so far from experiments on different animal species. (Author)

Schaper, P. H. and Schnell, H.
A CONTRIBUTION TO THE PREDNISONE THERAPY OF BOECK'S DISEASE. [1962] 11p. (figs. tables refs. omitted).
Order from SLA $1.60 62-16230

Trans. of [die] Medizinische [Welt] (West Germany) 1959, no. 52, p. 2575-2579.

DESCRIPTORS: *Drugs, *Corticosteroids, Therapy, *Tumors, *Lungs, Diagnosis, Tuberculosis.

We find with Boeck's disease, through the presence of a constitutionally-linked, but not invariable, preponderant defensive force, a premature destruction of the tubercule bacteria, and the response of the body to the liberated body substance of the bacteria takes place as a hyperergic reaction, similarly to what is the case with rheumatic diseases. By the aid of a short casuistic report on 5 individual cases, the good effect of prednisone (hostacortine) is shown. While the lung and eye changes showed definite involution within 3 weeks, the effect on the hilus changes was less definite or was dubious. However in each case all pathological changes underwent complete involution within a year. (Author)

Seel, Hans.
PHARMACOLOGICAL INVESTIGATIONS OF NATURAL AND SYNTHETIC MENTHOL. [1962] 24p.
Order from K-H $30.00 K-H 9767 b

Trans. of [Naunyn-Schmiedeberg's] Arch[iv für] Exp[erimentelle] Path[ologie und] Pharm[akologie] (Germany) 1927, v. 122, p. 338-353.

DESCRIPTORS: *Pharmacology, Synthesis (Chemistry), *Drugs.

Sterba, R. and Docekal, B.
PREGNENOLONE CREAM IN DERMATOLOGY AND COSMETICS. [1962] 5p.
Order from ATS $8.00 ATS-34P63C

Trans. of Ceskoslovenska Dermatologie, 1962, v. 37, no. 3, p. 203-206.

DESCRIPTORS: *Pregnanediols, Hormones, Diseases, Skin, *Ointments.

Toporkova, I. B.
VITAMIN C BALANCE IN CONNECTION WITH CHRONIC EXPOSURE OF TOBACCO INDUSTRIAL WORKERS TO TOBACCO DUST. [1962] 18p.
Order from K-H $22.50 K-H-10281-i

Trans. of Sanitarno-Gigienicheskii Meditsinskii Institut. Trudy (USSR) 1959, v. 47, p. 1693-1705.

DESCRIPTORS: *Ascorbic acid, *Tobacco, Toxicity, *Industrial medicine, *Atmospheric pollution

Unger, Fritz.
SOME REMARKS ON NATURAL AND SYNTHETIC MENTHOL. [1962] 4p.
Order from K-H $5.00 K-H 9767

Trans. of Pharm[azeutische] Z[ei]t[un]g [Vereinigt mit Apotheker-Zeitung] (West Germany) 1933, v. 78, p. 1203-1204.

DESCRIPTORS: Synthesis, *Drugs, Plants.

Valic, F. and Duric, D.
CONCENTRATION OF CARBON MONOXIDE IN THE BLOOD OF SMOKERS AND NON-SMOKERS. [1962] 13p.
Order from K-H $16.25 K-H 3199 f

Trans. of Arh[iv za] Hig[ijenu] Rada (Yugoslavia) 1954, v. 5, no. 1, p. 49-56.

DESCRIPTORS: *Cigarettes, *Smokes, Tobacco, *Toxicity, Carbon compounds, Monoxides, Blood.

Zak, N. N.
ON THE PHENOMENON OF CONVULSIONS IN TREATMENT WITH AMINACINE. [1962] 2p.
Order from OTS or SLA $1.10 62-14769

Partial trans. (extract) of [Zhurnal Nevropatologii i Psikhiatrii (USSR) 1957, v. 57, no. 6, p. 750-760].

DESCRIPTORS: Drugs, Therapy, *Psychoses, *Convulsions, *Chloropromazine, Toxicity.

Zakharov, N. V. and Orlyanskaya, R. L.
EFFECT OF EXCITATION AND CONVULSIONS INDUCED BY CORDIAMINE ON THE METABOLISM OF PROTEIN AND PHOSPHATES IN THE BRAIN. [1962] [11]p. (1 fig. omitted) 25 refs.
Order from OTS or SLA $1.60 62-14755

Trans. of Vopr[osy] Med[itsinskoi] Khim[ii] (USSR) 1960, v. 6, p. 349-353.

DESCRIPTORS: Physiology, *Brain, Stimulation, Drugs, *Metabolism, *Phospholipids, *Proteins, Labeled substances, *Convulsions, *Methionine, Pharmacology, Phosphates, Amines.

Stimulation evoked by cordiamine is accompanied by an increase in the metabolism of phospholipids, RNA, and phosphoproteides of the brain. Under the same experimental conditions an increase in the incorporation rate of S^{35}-methionine into the cerebral proteins is observed. During a 20-min. period of sharp stimulation a decrease in the original radioactivity is observed which is expressed in RSA of phosphorus activity. This decrease is 44.8% for the phospholipids and 24.8% for the protein phosphorus compounds. The results obtained indicate that during convulsive stimulation the disintegration process in the studied phosphorus cerebral fractions predominates over the resynthesis reactions, which leads to an exclusion of their radioactive phosphorus. (Author)

Radiobiology

SOVIET EXPERIMENTS WITH PLUTONIUM-239. 28 Dec 62 [89]p. JPRS: 16900.
Order from OTS or SLA $8.10 63-13662

Trans. of mono. Plutonii-239 Raspredelenie, Biologicheskoe Deistvie, i Uskorenie Vyvedeniya (Plutonium-239 Distribution, Biological Activity and Acceleration of Excretions) Moscow, 1962, p. 3-6, 86-91, 115-128, 142-161.

DESCRIPTORS: *Plutonium, *Toxicity, *Radiation sickness, Pathology, Anatomy, *Bone, Tissues (Biology), Ion exchange resins, *Complex compounds, *Gastrointestinal system, Excretion, Rats, Rabbits.

Contents:
Foreword, by A. V. Lebedinskii and Yu. I. Moskalev
Action of plutonium-239 on the rat organism, by Yu. I. Moskalev and others
Pathological anatomy of plutonium-239 sickness, by V. N. Strel'tsova
Pattern of changes in the bony tissue of rabbits exposed to plutonium-239, by Z. M. Bukhtoyarova
The influence of ion-exchange resins and complexons on the distribution of plutonium introduced into the gastrointestinal tract, by Yu. A. Belyaev
The effect of certain complexons on removal of plutonium from rats, by Yu. A. Belyaev.

Berlin, L. B. and Zhupen, V. F.
HISTOLOGICAL CHANGES IN SKIN FOLLOWING HOMOPLASTY TO BURNS OF IRRADIATED RABBITS. 17 Dec 62 [8]p. 29 refs. JPRS: 16715.
Order from OTS or SLA $1.10 63-13480

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 146, no. 1, p. 242-245.

DESCRIPTORS: Histology, *Skin, *Transplantation, Burns, *Tissues (Biology), Rabbits, *Radiation sickness, Epithelium, Regeneration.

Acute radiation sickness in rabbits was produced by a total single irradiation by x-ray of 600 r. On the same day 80 rabbits were subjected to thermal trauma by water heated to 82.5-83° on the inner skin surface of both ears. Twenty animals were studied in terms of histological changes in the skin following radiation sickness burn; while 60 rabbits, at various periods of acute radiation sickness, had necrectomies and homoplasty by graft taken from the external surface of the ear. Cortisone was administered intramuscularly in 1.0 mg/kg daily doses. At the same time complex treatment was given for the radiation sickness.

Dzhalagoniya, Sh. L., Sharov, A. S. and others.
REMOTE CONSEQUENCES OF CHANGES IN REACTIVITY OF THE CORTEX OF THE CEREBRAL HEMISPHERES OF MONKEYS SUBJECTED TO THE ACTION OF IONIZING RADIATION [AND] ELECTRONIC DIFFERENTIATOR. 11 Dec 62 [24]p. 7 refs. JPRS: 16629.
Order from OTS or SLA $2.60 63-13517

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR (USSR) 1962, .v. 12, no. 4, p. 623-629 and 762-768.

DESCRIPTORS: Cerebral cortex, Brain, Primates, Ionization, Electronic equipment, Radiation effects, Velocity, Measurement, *Motor reactions, *Acceleration, Reflexes, Conditioned reflex, Radiobiology.

Functional tests of the basic nervous processes (excitation and inhibition) within a year after irradiation of monkeys with a 378-399 r dose attest to a restoration of the initial state of these processes at a somewhat lower level. Despite the complete restoration of all indicators of conditioned reflex activity during the remote periods following radiation sickness, a regimen of intesified biological reflexes leads to the development of a severe neurotic state. A relatively mild vulnerability of the higher parts of the central nervous system of monkeys represents the result of a change in the reactivity of the cerebral cortex, as one of the residual symptoms of remote sequels of a radiation trauma to the organism. The change in cortical reactivity can be employed as a pathogenetic factor facilitating the obtainment of experimental neuroses in monkeys by well-known methods. (Dzhalagoniya) The electronic differentiator described differs from other analogous instruments not only in certain features of its circuitry but principally in the development of the calibration system. The instrument can be useful for an analysis of not only motions, but other physiological processes as well. (Sharov, et al)

Fedorov, Yu. A.
INCREASED DAMAGE TO THE TEETH BY DENTAL CARIES INDUCED BY IONIZING RADIATION. [1962] [7]p. (figs. refs. omitted).
Order from OTS or SLA $1.10 62-16295

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 5, p. 1195-1198.

An unedited rough draft trans. is available from OTS or SLA $1.60 as 62-24944, FTD-TT-62-183, 23 Feb 62 [12]p.

DESCRIPTORS: Teeth, *Dental caries, Ionization, *Radiation damage, Inhibition, Organic compounds, Phosphorus, Calcium, *Radioprotective drugs.

Franke, Herbert and Pliess, Gunther.
THE TESTING OF BIOLOGICAL-MORPHOLOGICAL RADIATION EFFECTS. [1962] 12p. (figs. omitted).
Order from SLA $1.60 62-16305

Trans. of Strahlentherapie (West Germany) 1961 [v. 116, no. 1] p. 85-96.

DESCRIPTORS: *Radiation effects, *Tissues (Biology), *Cells, (Biology), Morphology, Dentine, *Mitosis, Genetics, Growth.

Timofeeva, N. A.
SUR LA MIGRATION DU STRONTIUM RADIOACTIF DANS LES BIOGÉOCÉNOSES [Migration of Radiostrontium in Biogeocoenoses] tr. by Giuliani. 24 Mar 62 [9]p. 9 refs. CEA Trans. no. R1484 (text in French).
Order from OTS or SLA $1.10 62-25077

Trans. in French of Akad[emiya] Nauk SSSR. Dokl[ady] 1960, v. 133, no. 2, p. 488-491.

DESCRIPTORS: *Plants, *Ecology, Radioactive isotopes, *Strontium, Distribution.

Surgery

CHINESE JOURNAL OF SURGERY, 1962, VOL. 10, NOS. 5-7: TABLE OF CONTENTS. 27 Nov 62 [20]p. JPRS: 16382.
Order from OTS or SLA $1.60 63-13290

Trans. of Chung Hua Wai K'o Tsa Chih (Chinese People's Republic) 1962, v. 10, nos. 5-7, tables of contents and in some cases excerpts from the article concerned.

DESCRIPTORS: *Surgery, Bibliography, Abstracts, China.

EXPERIMENTAL SURGERY AND ANESTHESIOLOGY, 1962, VOL. 7, NO. 5: [SELECTED ARTICLES]. 17 Dec 62 [15]p. 10 refs. JPRS: 16698.
Order from OTS or SLA $1.60 63-13546

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1962, v. 7, no. 5, p. 42-46 and 65-68.

DESCRIPTORS: *Surgery, *Anesthesia, *Prosthetics, *Blood vessels, Plastics, *Transplantation, *Burns, Healing, Hyaluronate, Enzymes.

Contents:
"Biological" prostheses of the large blood vessels, by M. N. Anichkov and F. V. Balyuzek
Corrugation of a synthetic vascular transplant, by S. S. Ivanov
Enzymic lysis of the burn scab, by T. L. Zaets and S. K. Zav'yalov.

SURGERY, 1962 [VOL. 38] NO. 10: SELECTED ARTICLES. 27 Dec 62 [58]p. 67 refs. JPRS: 16866.
Order from OTS or SLA $5.60 63-13657

Trans. of Khirurgiya (USSR) 1962, [v. 38] no. 10, p. 6-40 and 117-119.

DESCRIPTORS: *Surgery, *Burns, Therapy, Errors, *Radiation injuries, Diet, Drugs, *Anemias, Pathology, Medicine, Blood transfusions, *Wounds and injuries, *Skin, Tissues (Biology), Radiation effects, *Plastics, Films, Elasticity, *Frostbite, *Freeze-drying, *Transplantation, *Antigen-antibody reactions, Shock (Pathology), Industrial medicine, *Bacteria, Blood, Adhesions (Medical), Contraction, Healing, Physiology.

Contents:
Errors in the treatment of the burned, by A. A. Vishnevskii and others
Radiation burns, by V. A. Ivanov and V. N. Petushkov
Clinical aspects, treatment and prophylaxis of burn cachexia, by V. I. Filatov
Acute radiation burns, by N. I. Karlashenko
The use of BF cement in the postoperative period for the treatment of minor injuries, burns and frostbites, by B. V. Chetverushkin and A. A. Avdykovich
The effect of freeze-drying on the antigenic properties of skin, by E. M. Saakyants
The problem of the prophylaxis and treatment of burns, by D. M. Terentsyan
Bacteremia as one of the pathogenetic factors in burn sickness, by A. M. Yakovlev and others
Cicatricial contracture after a burn of the trunk and arms, by N. E. Povstyanoi.

SURGERY, 1962, VOL. 38, NO. 11: SELECTED ARTICLES. 28 Dec 62 [42]p. 82 refs. JPRS: 16904.
Order from OTS or SLA $4.60 63-13633

Trans. of Khirurgiya (USSR) 1962, v. 38, no. 11, p. 20-30 and 81-100.

DESCRIPTORS: *Surgery, *Prosthetics, *Mechanical organs, *Plastic surgery, Blood vessels, Extremities, Esophagus, Abdomen, Plastics, Hernia, Polyvinyl chloride, *Medical research, Vinyl radicals, Chlorides.

Contents:
Arterial alloplasty with Soviet knitted prostheses, by A. N. Filatov and others
Alloplasty of the main blood vessels of the extremities, by N. I. Krakovskii and V. Ya. Zolotarevskii
Capsule formation and regenerative processes after alloplasty of esophagael segments, by V. P. Kulik
Experience in reconstruction of defects in the anterior abdominal wall by the alloplastic method, by A. Ya. Fishchenko
Plastic repair of the anterior abdominal wall with porolon, by I. S. Vasilenko and S. N. Mukhoedova
Alloplasty of recurrent hernias with polyvinyl chloride, by A. V. Pokrovskii and Yu. Z. Kreindlin.

Androsov, P. I. and Sheinberg, S. I.
IMPROVED APPARATUS FOR SUTURING BLOOD VESSELS AND ITS EXPERIMENTAL AND CLINICAL USE. [1962] 10p. (figs. omitted).
Order from OTS or SLA $1.10 62-18284

Trans. of Vestnik Khirurgii (USSR) n. d., p. 117-122.

DESCRIPTORS: *Blood vessels, Surgery, *Surgical supplies.

Androsov, P. I.; Kalinina, T. V.; Petrakovich, G. N.; and Vvedenski, S. P.
URETERORRHAPHY BY MECHANICAL SUTURE; SUTURING WITH ANGIORRHAPHIC APPARATUS OF AN URETER INJURED DURING OPERATION; ON THE TECHNIQUE OF CIRCULAR SUTURING OF THE URETER BY MEANS OF THE ANGIORRHAPTOR, tr. by E. R. Hope. Aug 62, 12p. 4 refs. DSIS T 374 R.
Order from NRCC NRCC C-4112; C-4146; C-4162

Trans. of Urologiya (USSR) 1957, v. 22, no. 5, p. 50-52; 1961, v. 26, no. 3, p. 34-36; Akusherstvo i Ginekologiya (USSR) 1961, v. 37, no. 2, p. 78-80.

DESCRIPTORS: Surgery, *Sutures, *Urinary system, Wounds and injuries, Therapy, *Surgical instruments, Staplers.

Babur, A. A.
COMPARATIVE EVALUATION OF THE USE OF CERTAIN PLASTICS IN EXPERIMENTAL RESECTION OF THE LIVER. 12 Dec [13]p. 39 refs. JPRS: 16652.
Order from OTS or SLA $1.60 63-13504

Trans. of Klinicheskaya Khirurgiya (USSR) 1962, no. 9[249] p. 20-26.

DESCRIPTORS: *Plastics, *Surgery, *Liver, Fibers (Synthetic), Hemorrhage, Inhibition.

Kalinina, T. V. and Astaf'ev, G. V.
THE SUTURING OF INTESTINES WITH A MECHANICAL SUTURE. [1962] 8p. (figs. omitted) 11 refs.
Order from OTS or SLA $1.10 62-18264

Trans. of [Vestnik Khirurgii (USSR) 1957, v. 79, no. 7, p. 129-132].

DESCRIPTORS: *Surgery, *Intestines, *Sutures, Medical equipment.

Kolesnikov, Ivan Stepanovich and Vikhriev, Boris Sergeevich.
SURGICAL TREATMENT OF DEEP THERMAL BURNS, CHAPS. I AND IV. 12 Dec 62]69]p. JPRS: 16655.
Order from OTS or SLA $6.60 63-13510

Trans. of mono. Operativnoe Lechenie Glubokikh Termicheskikh Ozhogov, Moscow, 1962, p. 6-20 and 46-77

DESCRIPTORS: *Surgery, *Burns, Therapy, Preparation, Shock (Pathology), Infections, Inhibition.

Contents:
Local changes of tissues in thermal burns
General principles in the treatment and peroperative preparation of patients with deep burns.

Kolesnikov, I. S. and Vikhriev, B. S.
SURGICAL TREATMENT OF DEEP THERMAL BURNS: CHAPS. IV, VII, CONTENTS. 26 Nov 62 [118]p. JPRS: 16362.
Order from OTS or SLA $9.60 63-13330

Trans. of mono. Operativnoe Lechenie Glubokikh Termicheskikh Ozhogov, Moscow, 1962, p. 46-77, 108-133, 179.

DESCRIPTORS: *Surgery, Therapy, Heat, *Burns, Transplantation, Skin, *Plastic surgery, *Surgical instruments.

Contents:
General principles of treatment and pre-operative preparation of patients suffering from deep burns
Technique of transplanting skin with a dermatone.

Petrovskii, B. V., Solov'ev, G. M. and others.
SPECIAL METHODS OF DIAGNOSING DISEASES OF THE HEART AND VESSELS. 27 Dec 62 [11]p. 7 refs. JPRS: 16858.
Order from OTS or SLA $1.10 63-13653

Trans. of Sovetskaya Meditsina (USSR) 1962 [v. 26] no. 5, p. 3-9.

DESCRIPTORS: *Cardiovascular system, Diseases, *Diagnosis, X-rays, Electrocardiography, Medical equipment, *Medical examination, *Surgery, *Heart.

Brief discussions are included concerning the following techniques: phase-roentgenocardiography, roentgenkymography, catherization and contrast studies, various forms of angiocardiography, radiocardiography, roentgenocinematography, electrocardiography, and phonocardiography.

Zoology

Dubrovskii, Yu. A.
CHARACTERISTICS OF THE DISTRIBUTION OF YELLOW AND SMALL GROUND SQUIRRELS IN THE AREA OF THEIR JOINT HABITATION (Osobennosti Razmescheniya Zheltykh i Malykh Susilov v Oblasti Ikh Sovmestnogo Obitaniya). Aug 62 [14]p. 6 refs. RTS 2112.
Order from OTS or SLA $1.60 62-32488

Trans. of Zoologicheskii Zhurnal (USSR) 1961, v. 40, no. 12, p. 1868-1873.

DESCRIPTORS: Distribution, *Squirrels, Ecology, Animals, Man, *Population.

Hitoshi, Kitahama.
THE SECULAR VARIATION OF THE TOTAL LENGTH OF SPRING HERRING CLUPEA PALLASII C. ET V. IN THE WESTERN COAST OF HOKKAIDO, tr. by Hack Chin Kim. July 59 [19]p. 19 refs.
Order from OTS or SLA $1.60 60-17427

Trans. of [Nihon Suisan Gakkaishi] (Japan) 1955, v. 21, no. 8, p. 915-920.

DESCRIPTORS: *Herring, Growth, Age, *Food, Ecology, Japan

The secular variation of the total length of spring herring in the western coast of Hokkaido was studied concerning the year classes from 1907 to '47 by using the moving average by 5 years. In regard to the growth of the fish, same tendency was seen in each age class in each year. The growth rate of fish was large before 1915, small 1916 to '29, large 1930 to '34, small 1935 to '39 and large after 1940. Especially, in recent years it was remarkably large. It can be considered that the brood amount gives influence to the growth rate of the fish. That is, the smaller the brood amount is, the more the fish grows and vice versa. (Author)

Maksimovic, Milos and Vasiljevic, Ljubisa.
THE ACTION OF ABIOTIC FACTORS ON GYPSY MOTH POPULATION IN THE FOREST JAKOVACKI KLJUC IN 1958 [AND] THE APPEARANCE OF POLYHEDRY IN THE GYPSY MOTH DURING THE FIRST YEAR AFTER THE END OF MASSIVE POPULATION (Dejstvo Abiotickih Cinilaca na Populaciju Gubara u Sumi Jakovacki Kljuc 1958 G. [and] Pojava Poliedrije Kod Gubara u Prvoj Godini po Zavrsetku Gradacije). 1962, 19p. 16 refs. PL-480 Agr.
Order from OTS $0.50 60-21662

Trans. of Zastita Bilja (Yugoslavia) 1959, no. 52/53, p. 37-44 and 79-87.

DESCRIPTORS: *Lepidoptera, *Reproduction, Growth, *Viruses, *Diseases, Epidemiology.

Ognev, S. I.
MAMMALS OF EASTERN EUROPE AND NORTHERN ASIA, VOL. I: INSECTIVORA AND CHIROPTERA, tr. by A. Birron and Z. S. Cole. 1962 [502]p. PL-480 Smi.
Order from OTS $5.00 60-21818

Trans. of mono. Zveri Vostochnoi Evropy i Severnoi Azii, v. 1, Moscow/Leningrad, 1928 [631]p.

DESCRIPTORS: *Mammals, *Animals, Classification, Distribution, Europe, Asia, *Bats

Ognev, S. I.
MAMMALS OF EASTERN EUROPE AND NORTHERN ASIA. VOL. II: CARNIVORA (FISSIPEDIA) tr. by A. Birron and Z. S. Cole. 1962 [605]p. PL-480 Smi.
Order from OTS $6.25 60-21819

Trans. of mono. Zveri Vostochnoi Evropy i Severnoi Azii, v. 2, Moscow/Leningrad, 1931 [785]p.

DESCRIPTORS: *Mammals, *Animals, Classification, Distribution, Europe, Asia, Fur, Dogs, Hedgehogs, Minks, Muskrats, Raccoons

(See also 60-21818)

Ognev, S. I.
MAMMALS OF USSR AND ADJACENT COUNTRIES. VOL. III: CARNIVORA (FISSIPEDIA AND PINNIPEDIA) tr. by A. Birron and Z. S. Cole. 1962 [655]p. PL-480 Smi.
Order from OTS $6.75 60-21820

Trans. of mono. Zveri SSSR i Prilezhaschikh Stran, v. 3, Moscow/Leningrad, 1935 [643]p.

DESCRIPTORS: *Mammals, *Animals, Asia, Europe, Classification, Distribution, *Cats, Aquatic animals, Marine biology, *Seals (Zoology).

See also: 60-21819

Ponomareva, L. A.
EUPHAUSIDS OF THE SEA OF JAPAN FEEDING ON THE COPEPODA, tr. by V. O. Pahn. [1962] 3p. 4 refs.
Order from OTS or SLA $1.10 62-24046

Trans of Akademiya Nauk SSSR. Doklady, 1954, v. 98, no. 1, p. 153-154.

DESCRIPTORS: *Marine biology, *Ecology, *Plankton, *Crustacea, Feeding, Behavior, Distribution, Sea of Japan.

Euphausids feed primarily in the upper 50-meter layer of water, although part of them (2-year-olds) feed also at a greater depth. As was mentioned above, they fed actively, both in winter and in spring, primarily in the evening and at night (except the spawners), maximum feeding taking place at 1 a.m. In addition to being omnivorous, euphausids are also "predators" to a considerable degree. These crustaceans can devastate a good sized "cloud" of plankton, when they are present in great numbers. (Author)

Savilov, A. I.
COMPARISON OF THE GROWTH OF MUSSELS (MYTILUS EDULIS) IN THE WHITE SEA AND SEA OF OKHOTSK. [1962] [13]p. 4 refs. C. E. Trans. 2299; [DSIR] NLL M. 4886.
Order from OTS or SLA $1.60 62-25386

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Okean[ologii]. Trudy, 1954, v. 11, p. 246-257.

DESCRIPTORS: *Mussels, Moelusca, Growth, Reproduction, Oceanography, Marine biology, White sea, Pacific ocean.

Shura-Bura, B. L., Sukhemlinova, O. I., and Isarova, B. I.
USE OF RADIOACTIVE TRACERS IN STUDYING THE ABILITY OF SYNANTHROPIC FLIES TO FLY ACROSS WATER BARRIERS. 10 Dec 62 [19]p. 6 refs.
JPRS: 16616.
Order from OTS or SLA $1.60 63-13474

Trans. of #Entomologicheskoe Obozrenie (USSR) 1962, v. 41, no. 1, p. 99-108.

DESCRIPTORS: *Insects, *Diptera, Muscidae, Distribution, Radioactive isotopes, Phosphorus.

The tagged atom method was used in studying the migration of flies across the Volkhov River in the summer of 1957. By feeding radioactive bait containing P_{32} it was possible to mark approximately 30% of all flies at the city dump. Subsequent catches and radiometric examination of 3214 flies caught at 13 points in the city on both sides of the river revealed 120 radioactive specimens (3.7% of the number of flies caught). Fly dispersal from the dump took place mainly toward the less sanitary section to town across the river. The dump is one of the main breeding grounds for flies in the city of Volkhov. Fly dispersal took place largely through independent flight. The 400-500 meter width of the Volkhov River was not a barrier to migration. (Author)

Svetovidov, A. N.
FISHES, VOL. IX, NO. 4: GADIFORMES (Ryby: Treskoobraznye) tr. by Walter J. Walters with Vladimir Walters. 1962, 304p. 150 refs. PL-480 Smi.
Order from OTS $3.00 63-11071

Trans. of Fauna S. S. S. R. [Novaya Seriya] 1948, v. 34 [221p.].

DESCRIPTORS: *Fishes, Classification, Distribution, Morphology, *Anatomy, Ecology, Geography, Paleoecology, *Cod, *Marine biology.

A monographic survey of the gadoids of the world. Special attention is given an osteologically based morphology, taxonomy to the species level, and world-wide distribution patterns. Notes are also included on such topics as the lower taxonomic levels, commercial importance, Biology, and synonymy of the group.

Yakhontov, V. V.
RESEARCH ACTIVITIES OF THE ZOOLOGISTS OF THE UZBEK ACADEMY OF SCIENCES. 10 Dec 62 [9]p. 7 refs. JPRS: 16601.
Order from OTS or SLA $1.10 63-13468

Trans. of Zoologicheskii Zhurnal (USSR) 1962, v. 41, no. 5, p. 797-800.

DESCRIPTORS: Scientific research, Animals, *Economics, *Ecology, *Fisheries.

A summary of current studies by academy members on the fauna of Uzbekistan and its reconstruction in the interests of the national economy, ecologo-faunistic relationships of useful and harmful animals, and biological bases of increasing fish productivity in reservoirs.

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 13 (CHEMISTRY SERIES). 29 Nov 62 [46]p. JPRS: 16411.
Order from OTS or SLA $4.60 63-13332

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, East Germany, Hungary, Poland, and Rumania.

DESCRIPTORS: *Abstracts, Biochemistry, *Ceramic materials, Chemical engineering, Physical chemistry, Inorganic substances, Organic compounds, Radiochemistry, Chemical analysis, Plastics, *Czechoslovakia, *East Germany, *Hungary, *Poland, *Rumania.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 21 (CHEMISTRY SERIES). 10 Dec 62 [25]p. JPRS: 16599.
Order from OTS or SLA $2.60 63-13466

Consists of abstracts of articles from the East European scientific and technical journals of East Germany and Rumania.

DESCRIPTORS: *Abstracts, Chemistry, Inorganic substances, Geochemistry, Crystal structure, Organic compounds, Minerals, Physical chemistry, Radiochemistry, Chemical analysis, Corrosion research, Plastics, Drugs, Chemical engineering, *East Germany *Rumania.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 23 (CHEMISTRY SERIES). 12 Dec 62 [55]p. JPRS: 16651.
Order from OTS or SLA $5.60 63-13522

Consists of abstracts from the East European scientific and technical journals of Poland.

DESCRIPTORS: *Abstracts, Chemistry, Inorganic substances, Physical chemistry, Organic compounds, Chemical analysis, Radiochemistry, Minerals, Biochemistry, Chemical engineering, *Poland.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 31 (CHEMISTRY SERIES). 26 Dec 62 [21]p. JPRS: 16836.
Order from OTS or SLA $1.60 63-13643

Consists of abstracts of articles from the East European scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Chemistry, Radiochemistry, Physical chemistry, Chemical analysis, Organic compounds, Conferences, *Hungary.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 33 (CHEMISTRY SERIES). 31 Dec 62 [16]p. JPRS: 16918.
Order from OTS or SLA $1.60 63-13665

Consists of abstracts of articles from the East European scientific and technical journals of East Germany and Hungary.

DESCRIPTORS: *Abstracts, Chemistry, *Glass, Organic compounds, Radiochemistry, Biochemistry, Physical chemistry, Chemical engineering, *East Germany, *Hungary.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1940, VOL. 29, NO. 2: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN RELATION WITH PETROLEUM RESEARCH]. [1961] 2p.
Order from OTS or SLA $1.10 61-20806

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1940, v. 29, no. 2, p. 91-94 and 98-111.

DESCRIPTORS: *Petroleum, Abstracts, *Corrosion, Solutions, *Napthalenes, Methyl radicals, Adsorption, Surface tension, *Vanadium, Oils, *Bitumens, Rock.

Contents:
Corrosion of metals by non-aqueous solutions, by R. S. Ambartsumyan and others
Reactivity of the napthalene ring in connection with the dispersion of the electromeric effect: Methyl and chloromethyl groups, by V. A. Izmail'skii
Structure of adsorption layers and the form of surface

tension isotherms, by A. B. Taubman
Vanadium in oil products and bituminous rocks, by G. G. Bergman.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1940, VOL. 29, NO. 3: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN RELATION WITH PETROLEUM RESEARCH]. [1961] 4p. 3 refs.
Order from OTS or SLA $1.10 61-20805

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1940, v. 29, no. 3, p. 208-209.

DESCRIPTORS: *Petroleum, Abstracts, *Bauxite, *Sulfur compounds, *Corrosion, Solutions.

Contents:
Influence of bauxites upon sulfur compounds contained in petroleum fractions, by L. I. Berents and A. V. Frost
Corrosion of metals by non-aqueous solutions, by L. G. Gindin and others.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1940 VOL. 29, NO. 7: [TABLES OF CONTENTS AND SELECTED ABSTRACT IN RELATION WITH PETROLEUM RESEARCH]. [1961] 2p.
Order from OTS or SLA $1.10 61-20807

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1940, v. 29, no. 7, p. 462-465.

DESCRIPTORS: *Petroleum, Abstracts, *Zinc compounds, Chlorides, *Alcohols.

Contents:
Effect of zinc chloride on octyl alcohol, by M. M. Gerasimov and V. E. Glushnev.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1941, VOL. 30, NO. 7: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN RELATION WITH PETROLEUM RESEARCH]. [1961] 2p. 4 refs.
Order from OTS or SLA $1.10 61-20814

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941, v. 30, no. 7, p. 624-628.

DESCRIPTORS: *Petroleum, Abstracts, *Polymerization, Pressure, *Hydrogen, Solubility.

Contents:
Tests of polymerization under pressure, by O. I. Leipunskii
Setschenoff's rule and the solubility of hydrogen sulfide in hydrochloric acid solutions, by A. F. Kapustinskii.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1941, VOL. 30, NO. 8: [TABLE OF CONTENTS AND SELECTED ABSTRACT IN RELATION WITH PETROLEUM RESEARCH]. [1961] 3p. 8 refs.
Order from OTS or SLA $1.10 61-20813

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941, v. 30, no. 8, p. 721-722.

DESCRIPTORS: *Petroleum, Abstracts, *Aluminum compounds, Chlorides, Cyclohexanes.

Contents:
Action of aluminum chloride on cyclohexane, by Yu. A. Arbuzov and N. D. Zelinskii.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1941, VOL. 31, NO. 2: [TABLE OF CONTENTS AND SELECTED ABSTRACT IN RELATION WITH PETROLEUM RESEARCH]. [1961] [1]p. 1 ref.
Order from OTS or SLA $1.10 61-20812

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941, v. 31, no. 2, p. 128.

DESCRIPTORS: *Petroleum, Abstracts, Sulfur compounds, Monoxides, Oxidation.

Contents:
Explosive oxidation of sulfur monoxide, by H. Kondrat'eva and V. Kondrat'ev.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1941, VOL. 31, NO. 4: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN RELATION WITH PETROLEUM RESEARCH]. [1961] 3p. 1 ref.
Order from OTS or SLA $1.10 61-20811

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941, v. 31, no. 4, p. 344-346, 350-351, 359-360.

DESCRIPTORS: *Petroleum, Abstracts, *Sorption, Electrical conductance, *Catalysts, *Carbon compounds, Sulfites, *Bitumens, Rocks, Luminescence.

Contents:
Influence of sorption upon the electrical conductivity of pulverized sorbents, by N. A. Figurovskii
Catalytic agents for the production of carbon disulfide from the elements, by L. Ya. Markovskii
A new luminescence method for establishing the bituminous nature of rocks, by V. N. Florovskaya.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1941, VOL. 31, NO. 5: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN RELATION WITH PETROLEUM RESEARCH]. [1961] 2p. 1 ref.
Order from OTS or SLA $1.10 61-20816

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1941, v. 31, no. 5, p. 441-447.

DESCRIPTORS: *Petroleum, Abstracts, *Ethylene oxide, Esters, *Synthetic rubber, Colloids.

Contents:
A new reaction of ethylene oxide. V. Condensation of ethylene oxide with cyclic β-keto esters, by K. G. Pakendorf and F. F. Machus
On structure development in rubber sols under the action of active fillers, by P. Rebinder and others.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1941, VOL. 31, NO. 8: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN RELATION WITH PETROLEUM RESEARCH]. [1961 2p.
Order from OTS or SLA $1.10 61-20822

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1941, v. 31, no. 8, p. 757-764.

DESCRIPTORS: *Petroleum, Abstracts, *Acetic acids, Sodium compounds, *Platinum compounds, Oxides, Acids.

Contents:
Cycloaliphatic acids: Cyclohexylgeranylacetic acid, by L. Leder-Pakendorf
Reaction of unsaturated molecules with sodium chloroplatinate, by Anna Gel'man.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1942, VOL. 35, NO. 3: [TABLE OF CONTENTS AND SELECTED ABSTRACT IN RELATION WITH PETROLEUM RESEARCH]. [1961 2p.
Order from OTS or SLA $1.10 61-20316

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1942, v. 35, no. 3, p. 71-75.

DESCRIPTORS: *Petroleum, Abstracts, *Boron, Distribution, Oils.

Contents:
Distribution of boron in the waters of Azerbaidzhan oil fields and its correlational value, by L. A. Gulyaeva.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1942, VOL. 37, NO. 3: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN RELATION WITH PETROLEUM RESEARCH]. [1961] 2p.
Order from OTS or SLA $1.10 61-20307

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1942, v. 37, no. 3, p. 98-100 and 104-105.

DESCRIPTORS: *Petroleum, Abstracts, *Geophysical prospecting, *Aluminum compounds, Oxides, Clays, Sulfur compounds, Dioxides.

Contents:
Contribution to the basis of the thermal method of prospecting, by S. S. Kovner
Extraction of aluminum oxide from kaolin by the action of sulfur dioxide, by P. P. Budnikov and I. I. Rivlin.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1942, VOL. 37, NO. 4: [TABLE OF CONTENTS AND SELECTED ABSTRACT IN RELATION WITH PETROLEUM RESEARCH]. [1961] 2p. 1 ref.
Order from OTS or SLA $1.10 61-20306

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady] de l'Academie des Sciences de l'U.R.S.S., 1942, v. 37, no. 4, p. 132-134.

DESCRIPTORS: *Petroleum, Abstracts, *Tars, Pyrolysis.

Contents:
Chemistry of pyrogenetic tars, by D. A. Frank-Kamenetskii.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 38, NO. 1: [TABLES OF CONTENTS AND SELECTED ABSTRACT IN RELATION WITH PETROLEUM RESEARCH]. [1961] 2p. 6 refs.
Order from OTS or SLA $1.10 61-20304

Abstract trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1943, v. 38, no. 1, p. 25-26.

DESCRIPTORS: *Petroleum, Abstracts, *Gasoline, Catalysis, Dehydrogenation.

Contents:
Improvement of Mirzaany gasoline by catalytic dehydrogenation, by Kh. I. Arezhidze.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 38, NO. 4: [PARTIAL CONTENTS AND SELECTED ABSTRACT IN RELATION WITH PETROLEUM RESEARCH]. [1961] [1]p. 4 refs.
Order from OTS or SLA $1.10 61-20302

Abstract trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1943, v. 38, no. 4, p. 142-145.

DESCRIPTORS: *Petroleum, Abstracts, Phenyl radicals, *Camphors.

Contents:
Some new derivatives of 4-phenylcamphor, by S. S. Nametkin and T. V. Sheremeteva.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 38, NO. 5/6: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN RELATION WITH PETROLEUM RESEARCH]. [1961] 2p.
Order from OTS or SLA $1.10 61-20303

Abstract trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1943, v. 38, no. 5/6, p. 186-189 and 197-199.

DESCRIPTORS: *Petroleum, Abstracts, *Glass, Infrared radiation, *Explosives, Detonation.

Contents:
Correlation of the chemical composition with permeability of glass to light in the infrared region, by Ya. I. Gerlovin
Quenching of detonation in long charges of explosive substances under conditions of increased initiation, by A. F. Belyaev.

Brodskii, A. I. and Ponomarev, T. N.
EQUILIBRIUM COMPOSITION OF GASEOUS MIXTURES UNDER HIGH PRESSURE [AND] THE COALS OF PECHORA AS A SOURCE OF FUEL FOR THE METAL INDUSTRY. [1961] 3p. 5 refs.
Order from OTS or SLA $1.10 61-20309

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1942, v. 36, no. 8, p. 237-242.

DESCRIPTORS: *Petroleum, Abstracts, *Gases, Mixtures, *Coal, Analysis, Fuels, Chemical equilibrium, Pressure.

Dragulescu, C., Simonescu, I. and others.
METAL COMPLEXES OF ANTRANYL-N, N-DIACETIC ACID. II. THE COMPLEX Fe^{III}-AND A COMPOUND. [1962] 7p.
Order from SLA $1.10 62-14448

Trans. of [Academia Republicii Populare Romine. Baza de Cercetari Stiintifice, Timisoara. Studii si Cercetari Stiintifice. Seria Stiinte Chimice, 1959, v. 6, no. 3/4, p. 9-19].

DESCRIPTORS: *Complex compounds, Metals, *Iron, Copper, Thorium, *Acetic acids, Reaction kinetics, Chemical analysis.

Photocolorimetry was used to determine the instability constant of the [Fe(III)-ANDA] complex by removing copper from the [Cu-ANDA] complex and replacing it with Fe(III). The value of K_{Fe} was found to be equivalent to $2.39 \cdot 10^{-10}$ for $\mu = 0.1$. A value of similar order was also found by replacing thorium from a [Th-ANDA] complex with iron. The [Fe(III)-ANDA] complex was isolated as a crystalline compound with the composition $C_{11}H_8O_6NFe \cdot 5H_2O$. (Author)

Gulyaeva, L. A., Itkina, E. S., and Romm, I. I.
VANADIUM, NICKEL AND COPPER IN PETROLEUM OF THE URAL-VOLGA OIL FIELDS. [1961] 3p. 10 refs.
Order from OTS or SLA $1.10 61-20317

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1941, v. 32, no. 6, p. 406-409.

DESCRIPTORS: *Petroleum, Abstracts, *Nickel, *Copper, *Vanadium, Oils.

[I]zawa, Masao, Kobashi, Yusuke and others.
INVESTIGATION OF FILTER-TIPPED CIGARETTES MANUFACTURED IN FOREIGN COUNTRIES, PT. 3. [1962] 34p.
Order from K-H $42.50 K-H 6063 g

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1956, v. 96, p. 91-105.

DESCRIPTORS: *Cigarettes, *Smokes, *Tobacco.

Lebedinskii, V. V.
STALIN LAUREATES IN CHEMISTRY FOR 1943. [1962] 2p.
Order from OTS or SLA $1.10 62-16782

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1943, no. 5, p. 321-327.

DESCRIPTORS: Chemistry, Chemical industry, Chemical engineering, *Chemists, *Scientific personnel.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
INORGANIC CATALYSTS. [Aug 62] 14p. 206 refs.
OTS Selective Bibliography SB-508
Order from OTS $0.10 OTS SB-508

DESCRIPTORS: *Catalysts, Synthesis, Chemical reactions, Chemical equilibrium, Resins, Elastomers, Decomposition, Oxidation, Reduction, Recombination reactions, Reaction kinetics, Theory, Energy, Molecular structure, Polymers, Absorption, Gas chromatography, Electrical conductance, Acids, Semiconductors.

Lists 206 domestic and foreign references on inorganic compounds relating to catalysts added to the OTS collection during the period 1959 through August 1962. Includes reports on synthesis, chemical reactions, equilibrium, inorganic resins, elastomers, decomposition, oxidation, reduction, atom recombination, kinetics, theory, energy bonds, structure and activity, inorganic polymers, absorption, retarders, gas chromatography, electrical conductivity, semi-metals, acidity, and others. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
ORGANIC CATALYSTS. PART I: ALIPHATIC COMPOUNDS AND PETROLEUM PRODUCTS. Aug 62, 18p. 266 refs. OTS Selective Bibliography SB-505.
Order from OTS $0.10 OTS SB-505

DESCRIPTORS: *Catalysts, Organic compounds, *Aliphatic compounds, *Petroleum, Reaction kinetics, Synthesis, Sorption, Absorption, Hydrogenation, Molecular isomerism, Decomposition, Oxidation, Esterification, Labelled substances, Desulfurization.

Lists 266 domestic and foreign references pertaining to aliphatic compounds and petroleum products added to the OTS collection during the period 1959 through August 1962. Includes reports on kinetics and mechanisms of reactions involving catalysis, synthesis, sorption, adsorption, hydrogenation, dehydrogenation, isomerization, decomposition, oxidation, esterification, tracer studies, cracking, desulfurization, refining, cyclization, research, and others. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
ORGANIC CATALYSTS. PART III: ORGANIC POLYMERS. Aug 62, 13p. 181 refs. OTS Selective Bibliography SB-507.
Order from OTS $0.10 OTS SB-507

DESCRIPTORS: *Catalysts, Organic compounds, Polymers, Synthesis, Polyester plastics, Epoxides, Metalorganic compounds, Plastics, Fluorocarbons, Condensation reactions, Ultraviolet radiation, Elastomers, Heat treatment, Copolymerization, Polymerization, Stereochemistry, Reaction kinetics, Molecular isomerism, Resins.

Lists 181 domestic and foreign references on organic polymers relating to catalysts added to the OTS collection during the period 1959 through August 1962. Includes reports on synthesis, polyperesters, epoxies, organometallics, fluorocarbons, plastics, condensation reactions, ultraviolet curing, elastomers, high-molecular compounds, thermal treatment, graft copolymerization, stereospecific polymerization, kinetics, isomers, monomers, resins, and others. (Author)

Richter, H., Wincierz, P. and others.
THE CONSTITUTION OF ZIRCONIUM-NIOBIUM ALLOYS. [1962].
Order from FRI FRI Trans-177

Trans. of Journal of the Less-Common Metals (Netherlands) 1962, v. 4, no. 3, p. 252-265.

DESCRIPTORS: *Zirconium alloys, *Niobium alloys, Chemical analysis.

Schwarz, Hans.
TOBACCO SUBSTITUTES. [1962] 4p.
Order from K-H $5.00 K-H-3523 a

Trans. of [Seifen-Öle-Fette-Wachse] (West Germany) 1946, v. 72, no. 3, p. 45-46.

DESCRIPTORS: Cigarettss, *Tobacco, Smokes, *Substitutes.

Varshavskii, S. L.
CONCERNING THE STRUCTURE OF PRODUCTS OF ADDITION OF METAL HALIDES TO UNSATURATED COMPOUNDS. [1961] [1]p.
Order from OTS or SLA $1.10 61-20803

Abstract trans. from [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1940, v. 29, no. 4, p. 315.

DESCRIPTORS: *Complex compounds, Molecular structure, Metals, *Halides.

Analytical Chemistry

Bessonov, S. V. and Plaksin, I. I.
THE EFFECTS OF OXYGEN ON THE FLOTATION OF GALENA AND CHALCOPYRITE (Vliyanie Kisloroda na Flotiruemost' Galenita i Khal'kopirita). Feb 62 [15]p. 9 refs. RTS 1933.
Order from OTS or SLA $1.60 62-24075

Trans. of Akademiya Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya, 1954, no. 1, p. 114-127.

DESCRIPTORS: *Lead compounds, *Sulfides, *Pyrites, *Flotation, Oxygen, Laboratory equipment, Chemical analysis.

A description is given of an apparatus for examining the effects of oxygen on the flotation of pure sulfide minerals. This apparatus has been used in a method in which the pure natural sulfides are ground and graded in the absence of oxygen; the subsequent flotation is performed in an inert gas (nitrogen, argon) with water either free from oxygen or containing a known amount. Quantitative results on the effects have been obtained in this way. (Author)

Chumachenko, M. N. and Tverdyukova, L. B.
MICRODETERMINATION OF ACTIVE HYDROGEN BY A GAS—CHROMATOGRAPHIC METHOD. 9 Apr 62 [7]p. 20 refs.
Order from OTS or SLA $1.10 62-14993

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142 [no. 3] p. 612-614.

DESCRIPTORS: *Gas chromatography, Test equipment, Microanalysis, Organic compounds, *Hydrogen, Determination, Lithium compounds, Aluminum compounds, Hydrides, Furan.

Details are given of a micro method for determining active hydrogen in organic compounds based on a chromatographic determination of the amount of gas liberated by reaction of the compound with a solution of $LiAlH_4$ in tetrahydrofuran. This method makes it possible to obtain accurate results and to decrease the time of one determination to 5-7 minutes. The accuracy of the method is ensured by the sensitivity of the detector, whose action is based on the measurement of the thermal conductivity of gases, thus eliminating the effect of temperature and pressure fluctuations on the analytical results; by the great difference in the thermal conductivity of hydrogen and nitrogen, which acts as the carrier gas; and by the elimination of a blank test. The method was used to analyze a number of compounds, for all of which satisfactory results were obtained. (Extract)

Grigoriev, V. N., Kan, Ya. S. and others.
VARIATION DE LA COMPOSITION ISOTOPIQUE DU MERCURE AU COURS DE SON ÉVAPORATION (Izmenenie Izotopicheskogo Sostava Rtuti pri Isparenii) (Variation of Isotopic Composition of Evaporated Mercury) tr. by de Trezvinsky. 4 Apr 62 [16]p. (Russian text included) 10 refs. CEA Trans. no. R 1594 (text in French).
Order from OTS or SLA $1.60 62-33260

Trans. in French of #Zh[urnal] Eksper[imental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1957, v. 33, no. [3] 9, p. 576-580.

DESCRIPTORS: *Mercury, Isotopes, Stable isotopes, Isotope separation, Evaporation, Vapor pressure, Mass spectroscopy.

On a etudie la variation de la composition isotopique du mercure pendant l'évaporation dans des conditions différentes, on a décelé l'influence essentielle de la cinétique d'évaporation à des faibles vitesses de distillation. On a déterminé les limites supérieures $\triangle p/p$ pour les isotopes de mercure. (Author)

Klimova, V. A. and Zabrodina, K. S.
THE MICRODETERMINATION OF METHOXY AND ETHOXY GROUPS. 21 Mar 62 [4]p. 6 refs.
Order from OTS or SLA $1.10 62-14996

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961 [no. 12] p. 2234-2235.

DESCRIPTORS: *Alkoxy radicals, Determination, Microanalysis, Potassium compounds, Iodides, Phosphoric acids.

Lanin, B. A. and Gorokholinskaya, M. S.
PHENOLS IN SHALE TAR. [1962] 2p. 5 refs.
Order from OTS or SLA $1.10 62-16820

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1943, v. 16, no. 1/2, p. 47-29.

DESCRIPTORS: *Creosote, *Shales, *Phenols, Tar.

Longuet, P. and Burglen, L.
NEWER METHODS FOR THE RAPID ANALYSIS OF CEMENTS. [1962] [21]p. 7 refs.
Order from SLA $2.60 62-18414

Trans. of Revue des Materiaux de Construction et de Travaux Publics. Edition C] (France) 1955, no. 474, p. 59-69.

DESCRIPTORS: *Cements, Chemical analysis, Laboratory equipment, Reagents, Gravimetric analysis, Volumetric analysis, Titration, Separation.

Louvrier, J. and Voinovitch, I. A.
VOLUMETRIC DETERMINATION OF SILICA BY WAY OF POTASSIUM SILICOFLUORIDE. [1962] 9p. 10 refs.
Order from SLA $1.10 62-18217

Trans. of Industrie Ceramique (France) 1959, no. 510, p. 243-247.

DESCRIPTORS: *Potassium compounds, *Fluorides, Silicates, *Dioxides, *Silicon compounds, *Volumetric analysis.

A rapid volumetric determination of silica is described in which results may be obtained at the end of two hours. Tests show that it is equal to classical methods in reproducibility and precision. It can be applied to many silicate minerals, rocks, mixtures, slags, enamels, etc

which are difficult to handle by the usual methods, i.e. it is applicable in the presence of seventeen elements without additional separations or modification. Run in groups and the use of an automatic titrator can still further reduce the labor per determination. (Author)

Luskina, B. M., Syavtsillo, S. V. and others.
MICRODETERMINATION OF CARBON AND HYDROGEN IN ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY. 5 Feb 62 [6]p. 5 refs.
Order from OTS or SLA $1.10 62-14995

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 141 [no. 4] p. 869-871.

DESCRIPTORS: *Gas chromatography, Microanalysis, Test equipment, Organic compounds, *Carbon, *Hydrogen, Determination.

In the method proposed, the reaction products, after combustion, were swept by a stream of helium directly into a chromatographic column with coarsely porous brick impregnated with tricresyl phosphate (20% by weight of the support). A katharometer was used as detector. This eliminated the passage of the unburnt part of the substance, the occurrence of flashes and explosions, and the need for using a gasometer. The analysis was carried out under strictly fixed conditions of temperature, pressure, and time, and did not require continuous observation. The method was used to analyze organic compounds containing C, H, and O. (Extract)

Onishi, Isao, Kohashi, Y., and Motomatsu, T.
ORGANIC ACIDS OF TOBACCO, PT. 2. [1962] 9p.
Order from K-H $11.25 K-H 11436 b

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1954, v. 90, p. 33-38.

DESCRIPTORS: *Organic acids, *Tobacco, Cigarettes, Chemical analysis.

Onishi, Isso, Tamasaki, K. and others.
STUDIES ON THE RELATIONSHIP BETWEEN THE COMPOSITION OF ESSENTIAL OIL OF TOBACCO AND THE TASTE OF TOBACCO SMOKE. [1962] 48p.
Order from K-H $60.00 K-H 11436 a

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1954, v. 90, p. 1-32.

DESCRIPTORS: *Tobacco, *Smokes, Cigarettes, *Taste *Oils, Chemical analysis.

Pain, Claude, Duval, Clement, and Lecomte, Jean.
A STUDY OF ANHYDROUS, HYDRATED, AND DEUTERATED CALCIUM SULFATE WITH THE AID OF THE THERMOBALANCE AND THE INFRARED ABSORPTION SPECTRUM, tr. by Bertha P. Klenova. 29 Jan 54, 3p. TVA 3258.
Order from OTS or SLA $1.10 62-32256

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1953, v. 237, no. 3, p. 238-240 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Calcium compounds, Sulfates, Anhydrides, Hydrides, *Deuterated compounds, Spectrographic analysis, Thermochemistry.

Patat, F.
THEORY AND REALITY IN POLYMERIZATION REACTIONS, tr. by Bertha P. Klenova. 27 Apr 53, 15p. 5 refs. TVA 3188.
Order from OTS or SLA $1.60 62-25803

Trans. of Angew[andte] Chem[ie] (West Germany) 1953, v. 65, p. 173-178.

DESCRIPTORS: Chemical reactions, *Polymerization, Theory, Chain reactions, *Phosphorus compounds, *Nitriles, Chlorides, *Ethylene oxide, Phenols, Reaction kinetics.

A theoretical description of polymerization as a chain reaction related to the chlorine detonating gas chain is followed by a discussion of the available quantitative data on polymerization reactions (starting, terminating, growth, and transfer reactions). The examples include the polymerization of phosphorus nitrile chloride, which was found to be analogous in every respect to the polymerization of vinyl compounds and dienes, and the addition reaction of ethylene oxide on phenol, which proceeds as an ion polymerization over the intermediate step of ether alcoholates. (Author)

Schmidts, W. and Bartscher, W.
FUNDAMENTALS OF THE CONDUCTIOMETRIC DETERMINATION OF CARBON. Dec 62.
Order from BISI £2 10s BISI-2907

Trans. of Zeitschrift für Analytische Chemie (West Germany) 1961, v. 181, p. 54-59.

DESCRIPTORS: *Carbon, Determination, Electrochemistry, Circuits.

Schöniger, W.
THE MICROANALYTICAL RAPID DETERMINATION OF HALOGENS AND SULFUR IN ORGANIC COMPOUNDS [Die Mikroanalytische Schnellbestimmung von Halogenen und Schwefel in Organischen Verbindungen]. [1962] 10p.
Order from K-H $12.50 K-H 12104

Trans. of Mikrochim[ica] Acta (Austria) 1956 [no. 4/6] p. 869-876.

Other translations are available from SLA mi$2.40, ph$3.30 as 59-10719 [1958] 13p. and mi$1.80, ph$1.80 as 61-10485 [1960] [10]p.

DESCRIPTORS: *Halogens, *Sulfur, Organic compounds, Microanalysis, Determination, Microchemistry.

Simon, H. and Müllhofer, G.
A MANOMETRIC PROCESS FOR C-H ANALYSIS WITH WEIGHED SPECIMENS OF 0.3 MG AND LESS. [1962] 8p. (figs. refs. omitted).
Order from SLA $1.10 62-16302

Trans. of Zeitschrift für Analytische Chemie (West Germany) 1961, v. 181, p. 85-91.

DESCRIPTORS: Laboratory equipment, *Manometers, Design, Calibration, *Carbon, *Hydrogen, Succinic acids, *Chemical analysis.

Spengler, G. and Wollner, E.
ADSORPTIVE SEPARATION OF WAXES AND WAX COMPOUNDS. [1962] 41p.
Order from K-H $51.25 K-H 5105 b

Trans. of Fette Seifen Anstrichmittel (West Germany) 1954 [v. 56, no. 10] p. 775-784.

DESCRIPTORS: Adsorption, Separation, *Waxes.

Staberg, Else-Marie.
TAR- AND NICOTINE CONTENTS IN CIGARETTE SMOKE. A COMPARATIVE INVESTIGATION OF VARIOUS BRANDS OF CIGARETTES AND STUDIES ON THE EFFECTS OF LENGTH AND MANNER OF SMOKING. [1962] 21p.
Order from K-H $26.25 K-H 10494c

Trans. of Nordisk Hygienisk Tidskrift (Sweden) 1960, v. 41, p. 199-216.

DESCRIPTORS: *Tobacco, Cigarettes, *Smokes, *Nicotine, *Tar, Chemical analysis.

Takimoto, Masayoshi.
AFFINITY OF CYANAMIDE DERIVATIVES FOR ION-EXCHANGE RESINS. [1962] 15p. 12 refs.
Order from SLA $1.60 62-14962

Trans. of Nihon Kagaku Zasshi (Japan) 1961, v. 82, no. 12, p. 1702-1708.

DESCRIPTORS: *Cyanamides, Molecular structure, Chromatographic analysis, *Ion exchange resins.

The strength of affinity of a total of about thirty compounds, of cyanamide derivatives and resembling compounds, toward cation- and anion-exchange resins was measured by chromatography, and the relationship between this and the chemical structure and dissociation constant was studied. It was found as a result that the tendency of affinity of the respective compounds toward ion-exchange resins was more or less regular, based on the affinity of their constituent radicals; that the affinity of cyclic compounds was stronger than that of non-cyclic compounds; and that the affinity of compounds possessing both acidic and basic radicals followed the same order as the magnitude of their dissociation constants. (Author)

Terent'ev, A. P. and Luskina, B. M.
DETERMINATION OF CARBON AND NITROGEN IN A SINGLE SAMPLE OF NITRO COMPOUNDS. Pt. 3 of Elemental Organic Analysis by the "Wet Combustion" Method. 3 Apr 62 [5]p. 13 refs.
Order from OTS or SLA $1.10 62-14976

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1961, v. 16, p. 462-464.

DESCRIPTORS: *Carbon, *Nitrogen, Determination, *Nitro radicals, Furans, Benzoic acids, Phenols, Anilines, Benzenes, Combustion.

A method has been developed for determining carbon and nitrogen in a single sample of nitro compounds, based upon the reduction of the nitro group by zinc dust in dilute sulfuric acid solution, with subsequent wet combustion by chromic and sulfuric acids by a previously described method. It was shown that in the simultaneous presence of the reduced and oxidized forms of nitrogen (-NO_2 or -N=N-), the method can be used for their separate determination. (Author)

Terent'ev, A. P., Syavtsillo, S. V., and Luskina, B. M.
RAPID DETERMINATION OF SILICON IN ORGANOSILICON COMPOUNDS. Pt. 2 of Elemental Organic Analysis by the "Wet Combustion" Method. 9 Apr 62 [7]p. 8 refs.
Order from OTS or SLA $1.10 62-14977

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1961, v. 16 [no. 1] p. 83-86.

DESCRIPTORS: *Silicon, Determination, Organic compounds, Combustion.

A rapid method for determining silicon in organosilicon compounds has been developed, based on their oxidation with a mixture of chromic and sulfuric acids at 150°. The silicic acid formed is filtered off, dissolved in alkali, converted to fluosilicate ion in the presence of acid; the excess acid is titrated with alkali. The determination takes 1.5 hours. The determination of silicon in compounds easily hydrolyzed by aqueous alkali to form silicic acid takes 30 minutes. (Author)

Tremillon, Bernard.
THE SEPARATION OF METALLIC ELEMENTS BY ANION EXCHANGE RESINS. I. STUDY OF THE FIXATION OF SOME COMPLEX CHLORIDES (Séparation d'Éléments Métalliques à l'Aide de Résines Échangeurs d'Anions. I. Etude de la Fixation de quelques Complexes Chlorures). [1962] [21]p.
Order from OTS or SLA $1.60 AEC-tr-5027

Trans. of Commissariat à l'Énergie Atomique (France) no. CEA-1407, 1961 (also pub. in Société Chimique de France. Bulletin, 1961, p. 275-281).

DESCRIPTORS: *Metallic compounds, *Complex compounds, *Chlorides, Separation, *Ion exchange resins, Resins, Quantitative analysis.

Trillat, J. J., Cuzin, J. and others.
STUDY OF TOBACCO SMOKE BY ELECTRON MICROSCOPY AND DIFFRACTION. [1962] 12p.
Order from K-H $15.00 K-H 8817 b

Trans. of Bulletin de Microscopie Appliquee (France) 1958 [ser. 2, v. 8, no. 3] p. 64-70.
Another trans. is available from OTS or SLA $1.60 as 59-18111, 19 June 59, 13p.

DESCRIPTORS: *Tobacco, *Smokes, *Cigarettes, Microanalysis, Electron microscopes, *Electron diffraction analysis.

For abstract see Technical Translations, 8: 122, 1962.

Voigt, Daniel.
DETERMINATION OF MAGNETOOPTICAL CONSTANTS OF PHOSPHITE IONS, tr. by Bertha P. Klenova. 28 Aug 53, 3p. 4 refs. TVA 3227.
Order from OTS or SLA $1.10 62-32255

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1953, v. 236, p. 1028-1030 (pub. by Gauthier-Villars et Cie, Paris)

DESCRIPTORS: Sodium compounds, Lithium compounds, *Phosphites, *Ions, Ionization potentials, *Magneto-optic rotation, Determination

The molecular constants of pure alkali phosphites were determined at different concentrations. The values obtained for the ionization constants of $H_2PO_3^-$ and $HPO_3^=$ exceeded the value for the molecular constant of H_3PO_3. These results are contrary to those that may be derived from studies of other mineral oxyacids and their ions. (Author)

Wickbold, R.
PHOTOMETRIC TURBIDITY TITRATION FOR DETERMINATION OF MINIMUM AMOUNTS OF SULFATE, tr. by Bertha P. Klenova. 22 Apr 53, 7p. 2 refs. TVA 3187.
Order from OTS or SLA $1.10 62-25804

Trans. of Angew[andte] Chem[ie] (West Germany) 1953, v. 65, p. 159-161.

DESCRIPTORS: *Sulfates, Determination, Titration, Turbulence, Photometers, Barium compounds, Chlorides.

The determination of sulfate by photometric turbidity titration with barium chloride, described by Ringbom, has been applied to amounts of sulfate, ranging two decimal powers lower. The method then gains in importance for the determination of traces of sulfur in organic compounds by the combustion method. These and other uses are discussed. (Author)

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1956, VOL. 1, NO. 4. 1962, 295p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4585

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1956, v. 1, no. 4, p. 609-[874].

DESCRIPTORS: Chemistry, *Inorganic compounds, *Calcium compounds, *Titanates, *Boranes, Boron compounds, Fluorides, Vapor pressure, Molybdenum compounds, Oxides, *Group V elements, Non-metals, *Niobium, *Tantalum, Reduction, Solvent action, Water, Separation, *Complex compounds, *Cobalt compounds, *Copper compounds, Hydroxides, *Beryllium compounds, Pyridine, *Vanadium compounds, Oxalic acid, *Polarographic analysis, Electrons, Bismuth, *Electrical conductance, Solutions, *Molecular properties, Physical chemistry, Chlorides, Sodium compounds, Citric acid, *Substitution reactions, Silver compounds, Lead compounds, *Dolomite, Potassium compounds, Bromides, *Rare earth metals, Iron, Lithium compounds, Nitrates, *Tungstates, *Alkaline earth metals, *Cryogenics, Solutions, Synthesis, *Pyrites, *Isotopes, Radioactive isotopes, *Chemical precipitation.

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Synthesis of pyrite labeled with sulfur-35, by V. F. Oreshko and others
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Coprecipitation with some complex compounds obtained by the action of organic precipitating agents, by I. M. Korenman and others
International Congress on Industrial Chemistry (no. 28) Madrid, by I. N. Lepeshkov

Blaser, Bruno.
A NEW ACID OF PHOSPHORUS, tr. by Bertha P. Klenova. 26 June 53, 13p. 8 refs. TVA 3206.
Order from OTS or SLA $1.60 62-25791

Trans. of Chem[ische] Ber[ichte] (West Germany) 1953, v. 86, p. 563-572.

DESCRIPTORS: *Phosphorus acids, Salts, Chemical properties, Preparation, Phosphorus compounds, Bromides, Sodium compounds, Bicarbonates, Hydrolysis.

The sodium salt of an acid of phosphorus was isolated from products of the hydrolysis of phosphorus tribromide in sodium bicarbonate solutions. The hydrolysis is catalyzed by acid and yields 2 moles of phosphorous acid. The name "diphosphorous acid" is proposed. Diphosphorous acid, $H_4P_2O_5$, or its sodium salt can be oxidized quantitatively by halides to hypophosphoric acid, $H_4P_2O_6$, pyrophosphoric acid, $H_4P_2O_7$, or their salts. The new salt differs significantly in its reactions from Amat's pyrophosphorous acid, which also has the composition $H_4P_2O_5$. (Author)

Boulle, Andre and Jary, Robert.
THE METAPHOSPHORIC ACIDS AND THEIR ALKALI METAL SALTS, tr. by Bertha P. Klenova. 29 Jan 54, 3p. 4 refs. TVA 3257.
Order from OTS or SLA $1.10 62-32257

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1953, v. 237, p. 258-260 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Phosphoric acids, *Alkali metal compounds, Salts, Preparation, Chemical properties

Dehydration of orthophosphoric acid gives mixtures containing variable proportions of meta- and polyphosphoric acids, particularly as a function of the temperature and the time of heating. Some results obtained in the preparation (under definite conditions) and in studies of such mixtures, and of the corresponding alkali salts, are discussed in this paper. (Author)

Feneant, Suzanne and Chedin, Jean.
PROPORTIONS (QUANTITATIVE ANALYSIS) BY RAMAN EFFECT AND EQUILIBRIUM OF FORMATION OF THE ION NO_2^+ IN THE BINARY MIXTURES HNO_3-H_2SO_4, tr. by Bertha P. Klenova. 7 Aug 57, 3p. 5 refs. TVA 3651.
Order from OTS or SLA $1.10 62-32273

Trans. of [Academie des Sciences, Paris]. Compt[es Rend[us] (France) 1956, v. 243, p. 41-44 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: Mixtures, Quantitative analysis, Raman spectroscopy, Ions, *Nitric acid, Nitrates, *Sulfuric acid, Chemical equilibrium, Dissociation

Guerin, Henri and Martin, Rene.
ALUMINUM PHOSPHATES, tr. by Bertha P. Klenova. 17 Oct 52, 2p. 1 ref. TVA 3134.
Order from OTS or SLA $1.10 62-32251

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1952, v. 234, p. 1777-1779 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Aluminum compounds, *Phosphates, Chemical equilibrium, Pyrolysis.

The equilibrium diagram of the system Al_2O_3-P_2O_5-H_2O at 60° C. shows the existence of the following aluminum phosphates: $Al_2O_3 \cdot 3P_2O_5 \cdot 6H_2O$, $Al_2O_3 \cdot 2P_2O_5 \cdot 4H_2O$ $2Al_2O_3 \cdot 3P_2O_5 \cdot 10H_2O$, $Al_2O_3 \cdot P_2O_5 \cdot 4H_2O$, and $Al_2O_3 \cdot P_2O_5 \cdot 10H_2O$. The decomposition temperatures of the corresponding anhydrous salts when heated in a vacuum increase as the ratio $Al_2O_3 : P_2O_5$ increases. (Author)

Guerin, Henri and Martin, Rene.
THE ARSENATES OF ALUMINUM, tr. by Bertha P. Klenova. 15 July 52, 2p. 2 refs. TVA 3114.
Order from OTS or SLA $1.10 62-32249

Trans. of [Academie des Sciences, Paris]. Comp[es] Rend[us] (France) 1950, v. 230, p. 2025-2027 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Aluminum compounds, *Arsenates, Chemical equilibrium, Pyrolysis.

The equilibrium diagram of the system Al_2O_3-As_2O_5-H_2O at 60° C. indicates the existence of two aluminum arsenates: $Al_2O_3 \cdot 2As_2O_5 \cdot 3H_2O$ and $Al_2O_3 \cdot As_2O_5 \cdot 2H_2O$. Under the action of heat, four compounds with characteristic ratios $Al_2O_3 : As_2O_5$ can be isolated from these salts:

$Al_2O_3 \cdot 2As_2O_5$;
$2Al_2O_3 \cdot 3As_2O_5$;
$Al_2O_3 \cdot As_2O_5$;
$3Al_2O_3 \cdot 2As_2O_5$. (Author)

Weber, R.
REMOVAL OF SULFUR DIOXIDE FROM A CARBON DIOXIDE GAS STREAM WITH MARBLE, tr. by Bertha P. Klenova. 21 Feb 52 [8]p. 4 refs. TVA 3086.
Order from OTS or SLA $1.10 62-25810

Trans. of Angew[andte] Chem[ie] (West Germany) 1951, v. 63, p. 467-469.

DESCRIPTORS: *Carbon dioxide, Purification, *Sulfur compounds, Dioxides, Absorbants, *Marble, Towers (Chemistry).

In laboratory experiments to remove sulfur dioxide from carbon dioxide, the carbon dioxide gas is sent up from the bottom through a column packed with marble chips and the water is added continuously at the top. The purification effect has been investigated for a marble of definite grain size as a function of the amount of water, the height of the column, the gas velocity, and the amount of sulfur dioxide in the carbon dioxide. (Author)

Organic Chemistry

BIOGRAPHIC INFORMATION ON ACADEMICIAN PROFESSOR C. D. NENITESCU: RUMANIA. 12 Dec 62 [8]p. JPRS: 16648.
Order from OTS or SLA $1.10 63-13509

Trans. of Revista de Chimie (Rumania) 1962 [v. 13, no. 7] p. 383-384.

DESCRIPTORS: *Scientific personnel, Chemistry.

Boronichev, G. A.
POSSIBILITIES OF REDUCING CARBON DISULPHIDE CONSUMPTION IN STAPLE FIBRE PLANTS, tr. by I. Gawronska. 19 Aug 60 [3]p. Courtaulds Misc. Lit. 3205; NLL M. 2671.
Order from OTS or SLA $1.10 62-24891

Trans. of Khim[icheskie] Volok[na] (USSR) 1959, no. 1, p. 53.

DESCRIPTORS: Cellulose, *Synthetic fibers, Manufacturing methods, *Carbon compounds, *Sulfides, Reduction.

Borsche, W. and Fiedler, Anna.
ON DINITROCHLOROTOLUENE WITH REACTIVE CHLORINE. [1962] 22p. 16 refs.
Order from SLA $2.60 62-16301

Trans. of [Chemische] Ber[ichte] (Germany) 1913, v. 46, p. 2117-2131.

DESCRIPTORS: *Toluenes, Chlorides, Nitro radicals, Chlorine, Synthesis.

Freidlin, L. Kh. and Sharf, V. Z.
HYDRATION OF PROPYLENE OXIDE IN THE VAPOUR PHASE ON TRICALCIUM PHOSPHATE, tr. by I. Gawronska. 26 June 61 [9]p. 11 refs. Courtaulds Misc. Lit. 3314; NLL M. 3407.
Order from OTS or SLA $1.10 62-23971

Trans. of #A[kademiya] N[auk] SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1960, no. 2, p. 182-187.

DESCRIPTORS: *Propenes, Oxides, *Glycols, Vapors, Hydrates, Catalysts, *Calcium compounds, Phosphates.

The catalytic activity of tricalcium phosphate in the reaction of vapour phase hydration of propylene oxide to form propylene glycol has been investigated. Calcium triphosphate is a stable and selective catalyst of this reaction. The effect of temperature, time of contact and of water excess on the yield of glycol has been determined. Under optimum conditions of the reaction, large

amounts of glycol are formed; the yield at 232° reaches 50-57%. Similar results were obtained in the hydration of ethylene oxide. The high specificity of phosphate catalyst in the reaction of propylene oxide hydration is illustrated by its almost complete lack of catalytic influence of the isomerization of oxide into allyl alcohol and propionic aldehyde. The reaction mechanism is discussed. (Author)

Freidlina, F. Kh. and Nesmeyanov, A. N.
ADDITION OF IODINE TRICHLORIDE TO ACETYLENE AND THE STRUCTURE OF β-CHLOROVINYL IODOCHLORIDE. [1961] [1]p. 1 ref.
Order from OTS or SLA $1.10 61-20821

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady de l'Academie des Sciences de l'U.R.S.S., 1941, v. 31, no. 9, p. 892-894.

DESCRIPTORS: *Vinyl chlorides, *Acetylenes, *Iodine compounds, *Chlorides, *Complex compounds.

Freydlina, R. Kh. and Belyavskii, A. B.
TELOMERIZATION OF ETHYLENE AND CARBON TETRACHLORIDE OR CHLOROFORM IN THE PRESENCE OF HEXACARBONYLS OF CHROMIUM, MOLYBDENUM AND TUNGSTEN, tr. by I. Gawronska. 19 July 61 [2]p. 4 refs. Courtaulds Misc. Lit. 3343; NLL M. 3438.
Order from OTS or SLA $1.10 62-24848

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 1, p. 177-178.

DESCRIPTORS: *Ethylenes, *Carbon tetrachloride, *Chloroform, Polymerization, Catalysts, Carbonyl radicals, *Chromium compounds, *Molybdenum compounds, *Tungsten compounds.

Chromium hexacarbonyl is most effective among the initiators examined; in its presence the reaction between ethylene and carbon tetrachloride or chloroform at 115-120° proceeds smoothly producing α, α, ω, ω-tetrachloroalkanes and α, ω, ω-trichloroalkanes respectively. Under similar conditions the hexacarbonyls of molybdenum and tungsten are less effective, as illustrated by a lower degree of conversion and by the formation of a complex mixture of secondary products. The telomerization of ethylene with carbon tetrachloride or chloroform is initiated by a series of metallic carbonyls. (Author)

Gladyshev, G. P. and Rafikov, S. R.
INITIATION OF POLYMERIZATION WITH ELECTRIC CHARGES FORMED ON THE BOUNDARY BETWEEN PHASES, tr. by I. Gawronska. 19 July 61 [5]p. 14 refs. Courtaulds Misc. Lit. 3341; NLL M. 3436.
Order from OTS or SLA $1.10 62-24846

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 137, no. 1, p. 113-115.

DESCRIPTORS: *Acrylonitriles, Methyl radicals, *Acrylic resins, Polymerization, Electric potential, Phase transformation, Liquids, Solids.

After 3 hrs. the degree of conversion reaches 5-10%. It is demonstrated that the polymerization of acrylonitrile and methylmethacrylate can be initiated by electric charges formed on the boundary surfaces between the phases in the absence of the usual initiators. There is some basis for the assumption that the polymerization of many other unsaturated compounds may be effected in this way. (Author)

Göhring, Margot, Niedenzu, R., and Ratzel, G.
PHOSPHORUS-NITROGEN COMPOUNDS, tr. by Bertha P. Klenova. 16 Apr 58, 1p. TVA 3711.
Order from OTS or SLA $1.10 62-25802

Trans. of Angew[andte] Chem[ie] (West Germany) 1957, v. 69, p. 105.

DESCRIPTORS: *Phosphorus compounds, *Nitrogen compounds, *Amides, *Imides, Preparation.

The purpose of the study was to prepare the amides and imides of oxyacids with phosphorus of the oxidation number +5, insofar as these were not known. The reaction of diphosphoric acid tetrachloride with ammonia was investigated with this in view. (Author)

Göhring, Margot and Niedenzu, Kurt.
PHOSPHOROUS-NITROGEN COMPOUNDS, PTS. I-IV, tr. by Bertha P. Klenova. 17 Sep 57 [15]p. 15 refs. TVA 3662.
Order from OTS or SLA $1.60 62-25792

Trans. of Chem[ische] Ber[ichte] (West Germany) 1956, v. 89, p. 1768-1775; v. 90, p. 151-153.
Other translations are available from SLA (pts 1-3) mi$2.40, ph$3.30 as 61-10178 [1960] 12p; (pt 4) $1.10 as 61-10147 [1961] 4p.

DESCRIPTORS: *Phosphorus compounds, *Nitrogen compounds, *Amides, *Imides, *Phosphoric acids, Ammonia, Preparation, Chemical properties, Molecular structure.

Contents:
The amides of phosphoric acid and thiophosphoric acid
The amide of diphosphoric acid and the amides of monoimido-diphosphoric acid and of diimidotriphosphoric acid
Orthophosphoric acid amide imide
The reaction between ammonia and diphosphoric acid tetrachloride.

Gurevich, I. L. and Zhake, L. Yu.
TRIETHYLENEGLYCOL AS SELECTIVE SOLVENT OF AROMATIC HYDROCARBONS. [1962] 9p. 14 refs.
Order from OTS or SLA $1.10 62-16125

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 5, p. 11-14.

DESCRIPTORS: *Organic solvents, *Glycols, *Ethylenes, Hydrocarbons, Benzenes.

Triethyleneglycol was studied as a selective solvent and its convenience for extraction of aromatic hydrocarbons was demonstrated. Efficiency of the multiple stage extraction is shown. It was found, that thegraphic methods of Hunter and Nash and of Verteresyan and Finske for determination of the number of extraction steps give results agreeing with the experiment and can be applied for solution of practical problems connected with the choice of extractive conditions and with the preparation of products with preassigned qualities. Alders formula for determination of the number of extraction steps was checked on the system benzene-heptane-triethyleneglycol, but its accuracy does not exceed 87% (Author)

Hamann, Adolf.
THE RAPID POLYMERIZATION OF CAPROLACTAM. [1962] 21p. 22 refs.
Order from SLA $2.60 62-10656

Trans. of Faserforschung und Textiltechnik (Germany) 1958, v. 9, no. 9, p. 351-361.

DESCRIPTORS: *Synthethic fibers, *Lactams, Polymerization, Sodium compounds, Hydroxides, Hydrogen, Water, Heating, Melting, Manufacturing methods.

In the rapid polymerization of caprolactam with sodium hydroxide the real initiator of polymerization, the salt-like sodium lactam, is formed in a preliminary equilibrium reaction when the unfavorable equilibrium is permenantly distorted by the removal of the water which is simultaneously formed. In contract with the normal distribution, the polymeriante in characterized at first by an everabundance of long chain molecules; this is explained on the basis of the polymerization process and is normalized within a few hours by reheating. The principles of rapid polymerization are examined and a method of commercial application is given. (Author)

Horner, Leopold; Beck, Peter; and Toscano, Vincente, G.
DIARYL CHLOROPHOSPHINE FROM ARYL DICHLOROPHOSPHINES BY DISPROPORTIONATION. [Pt.] 28 of Organophosphorus Compounds. [1962] [5]p. 13 refs.
Order from SLA $1.10 62-16191

Trans. of Chemische Berichte (West Germany) 1961, v. 94, p. 2122-2125.

DESCRIPTORS: *Phosphorus compounds, Organic compounds, *Phosphines, Chlorides, Phenyl radicals, Synthesis, Aluminum compounds, Disproportionation.

Aryl dichlorophosphines decompose to diaryl chlorophosphine and phosphorus trichloride in the presence of aluminum chloride. Diphenyl phosphinic acid can be converted to diphenyl trichlorophosphoran with phosphorus pentachloride, and to diphenyl chlorophosphine by subsequent reduction. (Author)

Ide, Fumio.
GRAFT POLYMERIZATION OF METHYL METHACRYLATE ON POLYVINYL ALCOHOL. [1962] 24p. 12refs.
Order from SLA $2.60 62-14967

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 9, p. 1676-1681.

DESCRIPTORS: *Graft polymers, *Acrylic resins, Methyl radicals, Polymerization, *Vinyl alcohols, Catalysts, *Cerium compounds, Salts, Nitric acid.

Ishiguro, Takeo, Kato, Sadatake, and Akasawa, Yasaburo.
ON THE METHOD FOR MANUFACTURING DIETHYLENEGLYCOL AND TRIETHYLENEGLYCO. Rept. 1 of Study on Polyethyleneglycols and the Derivatives. [1962] [24]p. (foreign text included) 7 refs.
Order from SLA $2.60 62-18191

Trans. of Yakugaku Zasshi (Japan) 1943, v. 63, no. 6, p. 282-289.

DESCRIPTORS: Polymers, *Ethylenes, *Glycols, Manufacturing methods, *Industrial production.

Ishiguro, Takeo, Kato, Sadatake, and Akasawa, Yasaburo.
ON THE METHOD FOR MANUFACTURING TRIETHYLENEGLYCOL. Rept. 3 of Study on Polyethyleneglycols and the Derivatives. [1962] [16]p. (foreign text included) 2 refs.
Order from SLA $1.60 62-18192

Trans. of Yakugaku Zasshi (Japan) 1944, v. 64, no. 5, p. 294-298.

DESCRIPTORS: Polymers, *Ethylenes, *Glycols, Manufacturing methods, *Industrial production.

(See also 62-18191)

Jaacks, Volker and Kern, Werner.
ON POLYMERIZATION IN TRIOXANE SUBLIMATION (Über die Polymerisation bei der Sublimation des Trioxans). Article no. 17 on Polyoxymethylenes. [1962] [11]p. 12 refs.
Order from SLA $1.60 62-16618

Trans. of Makromolekulare Chemie (Switzerland) 1962, v. 52, Apr, p. 37-47.

DESCRIPTORS: *Methanes, Oxygen compounds, Sublimation, Polymerization, Formaldehyde, Catalysis.

Pure trioxane, when sublimed i. vac. or when crystallized undergoes slow polymerization in the crystalline state to high molecular weight polyoxymethylene. Polymer yields decrease with rising content of water in the monomer and with rising pressure of inert gases during sublimation. This polymerization is initiated by traces

of monomeric formaldehyde present in the trioxane; after destroying formaldehyde by means of silver oxide trioxane could be sublimed and crystallized without polymerization. During polymerization of trioxane monomeric formaldehyde is split off from the active chain-ends; thus the initiator of polymerization is regenerated. Therefore minute traces of formaldehyde remaining after treatment with silver oxide can increase autocatalytically during subsequent sublimations and again cause considerable polymerization of the trioxane. In order to exclude formation of monomeric formaldehyde from trioxane in other ways, the autoxydation of trioxane was investigated. The described polymerization of trioxane apparently proceeds by a cationic mechanism. A mechanism is proposed for the initiation of polymerization by monomeric formaldehyde. (Author)
(See also 62-10671, 62-10679)

Kato, Sadatake.
ON THE CATALYTIC ACTION OF AMINES IN THE PREPARATION OF POLYETHYLENEGLYCOLS. I. CATALYTIC ACTION OF AMINES IN THE GLYCOL-ETHYLENE OXIDE AND DIETHYLENEGLYCOL-ETHYLENE OXIDE SYSTEMS. Rept. 5 of Study on Polyethyleneglycols [and the Derivatives]. [1962] [13]p. (foreign text included) 6 refs.
Order from SLA $1.60 62-18193

Trans. of Yakugaku Zasshi (Japan) 1951, v. 71, no. 1, p. 20-23.

DESCRIPTORS: *Catalysts, *Amines, Polymers, *Ethylenes, *Glycols, *Oxides, Manufacturing methods, *Industrial production.

(See also 62-18192)

Kato, Sadatake.
ON THE CATALYTIC ACTION OF AMINES IN THE PREPARATION OF POLYETHYLENEGLYCOLS. II. CATALYTIC ACTIONS OF AMINES IN THE GLYCOL-ETHYLENE OXIDE SYSTEM AND THE DIETHYLENEGLYCOL-ETHYLENE OXIDE SYSTEM. Rept. 6 of Study on Polyethyleneglycols [and the Derivatives]. [1962] [10]p. (foreign text included) 6 refs.
Order from SLA $1.10 62-18194

Trans. of Yakugaku Zasshi (Japan) 1951, v. 71, no. 1, p. 24-27.

DESCRIPTORS: *Catalysts, *Amines, Polymers, *Ethylenes, *Glycols, *Oxides, Manufacturing methods *Industrial production.

(See also 62-18193)

Kolesnikov, G. S. and Avetyan, M. G.
SYNTHESIS, POLYMERIZATION AND COPOLYMERIZATION OF 1,1-DICHLORO-2-FLUOROETHYLENE, 1-CHLORO-2-FLUOROETHYLENE, 1,1-DIBROMO-2-FLUOROETHYLENE AND 1-BROMO-2-FLUOROETHYLENE, tr. by I. Gawronska. 11 July 61 [10]p. 23 refs. Courtaulds Misc. Lit. 3337; NLL M. 3430.
Order from OTS or SLA $1.10 62-24842

Trans. of Akad[emiya] Nauk Arm[yanskoi] SSR [Erevan], Izvest[iya]. [Khimicheskikh Nauki] 1958, v. 11, no. 3, p. 201-209.

DESCRIPTORS: *Ethylenes, Chlorine compounds, Fluorine compounds, Bromine compounds, Synthesis, Polymerization, Copolymerization, *Styrines, *Vinyl chlorides.

Nagase, T. and Kozima, L.
PREPARATION OF PERFLUOROCARBOXYLIC ACIDS BY ELECTROCHEMICAL FLUORINATION ALCOHOLS. [1962] 10p. (2 figs. 2 tables 11 refs. omitted).
Order from SLA $1.10 62-14874

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, [no. 8] p. 1397-1400.

DESCRIPTORS: *Carboxylic acids, Acetic acids, Propionic acids, Fluorides, Preparation, *Electrochemistry, *Alcohols, Ethanols, Propanols, Butanols, *Fluorination.

Relatively high yields of porfluorocarboxylic acids have been obtained by electrochemical fluorination of alcohols. About 30 g. of ethyl alcohol, n-propyl alcohol, isopropyl alcohol, or n-butyl alcohol was dissolved in 1 l. of anhydrous hydrogen fluoride, and electrolyzed at various current densities. Best yields of perfluorocarboxylic acids were obtained at the cathodo current density of 3.3 A/dm^2 in each case, the yield being 29.7, 23.3, 10.9, and 20.4%, respectively, from ethyl alcohol, n-propyl alcohol, isopropyl alcohol, and n-butyl alcohol. The mechanism of fluorination has been elucidated. (Author)

Nesmeyanov, A. N. and others.
HALOGEN COMPOUNDS OF FERROCENE. 9 Oct 61 [7]p. 3 refs.
Order from OTS or SLA $1.10 62-14278

Trans. of Akad[emiya] Nauk SSSR, Doklady, 1955, v. 100, no. 6, p. 1099-1101.

DESCRIPTORS: *Ferrocenes, *Halogen compounds, Synthesis, Iodine compounds, Bromine compounds, Chlorine compounds.

Nishishin, G. I., Ogibin, Yu. N., and Petrov, A. D.
FREE RADICAL ADDITION OF DICARBOXYLIC ACID ESTERS TO γ-OLEFINS AND THE SYNTHESIS OF ESTERS OF γ-ALKYLDICARBOXYLIC ACIDS, tr. by I. Gawronska. 23 Jan 62, 7p. 3 refs. Courtaulds Ltd. Misc. Lit. 3429; [DSIR] NLL M. 3605.
Order from OTS or SLA $1.10 62-25321

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 7, p. 1326-1330.

DESCRIPTORS: *Carboxylic acids, *Esters, Synthesis, *Free radicals, *Alkyl radicals.

The free-radical addition of the esters of dicarboxylic acids to α-olefins results in the formation of esters of α-alkylcarboxylic acids. The yields are high. This reaction can be utilized for the synthesis of α-alkyldicarboxylic acids. Carboxylic acids (or their esters) combine with the esters of unsaturated acids forming dicarboxylic acid esters. (Author)

Nitzsche, Siegfried and Wick, Manfred.
SUBSTANCES, BASED ON ORGANOPOLYSILOXANES, WHICH HARDEN ON THE ADMISSION OF MOISTURE (ATMOSPHERIC). [1962] 3p. 3 refs.
Order from OTS or SLA $1.10 62-18501

Trans. of German patent 1,120,690, appl. 20 Feb 59, issued 28 Dec 61, by Wacker-Chemie G. m. b. H.

DESCRIPTORS: *Organic compounds, *Silicones, Moisture, *Hardening, Substitutes.

Petrov, A. A.
RESEARCH ON CONJUGATED SYSTEMS. XXIV. INTERACTION OF ISOPRENE WITH HYPOBROMOUS ACID AND ALKYL HYPOIODITES. [1962] 4p. 13 refs.
Order from OTS or SLA $1.10 62-16829

[Abstract] trans. of Zhurnal Obshchei Khimii (USSR) 1943, v. 13, no. 6, p. 481-490.

DESCRIPTORS: *Complex compounds, *Pentadienes, Hydrogen compounds, Bromides, Alkyl radicals, Iodides, Chemical reactions.

See also 61-18039

Petrov, A. A.
RESEARCH ON CONJUGATED SYSTEMS. XXV. ISOMERIC DICHLORIDES AND DIBROMIDES OF ISOPRENE: SYNTHESIS AND PROPERTIES OF α- AND γ -BROMOISOPRENES. [1962] 4p. 16 refs.
Order from OTS or SLA $1.10 62-16825

[Abstract] trans. of Zhurnal Obshchei Khimii (USSR) 1943, v. 13, no. 9/10, p. 741-751.

DESCRIPTORS: *Complex compounds, Molecular isomerism, *Pentadienes, Chlorides, Bromides, Synthesis.

See also 62-16829

Planovskii, A. N. and Kagan, S. Z.
ON THE CONTINUOUS SULFONATION OF BENZENE. [1962] 22p. 20 refs.
Order from OTS or SLA $2.60 62-14071

Trans. of Promyshlennost' Organicheskoi Khimii (USSR) 1940, v. 7, p. 296-304.

DESCRIPTORS: *Benzenes, Sulfonation.

Polyakov, A. I., Derevitskaya, V. A., and Rogovin, Z. A.
NEW CELLULOSE AND OTHER POLYSACCHARIDE DERIVATIVES. XIV. SYNTHESIS OF ESTERS OF CELLULOSE WITH α -AMINO ACIDS. 1961, 8p. 5 refs.
Order from OTS or SLA $1.10 62-14285

Trans. of Vysokomol[ekulyarnye] Soed[ineniya] (USSR) 1961, v. 3, no. 7, p. 1027-1030.

DESCRIPTORS: *Polysaccharides, *Cellulose esters, Synthesis, *Amino acids, Glycine, Alanine, Alcohols, Methanols, Phenols, Formamides, Carbohydrates.

A method has been developed for synthesizing cellulose esters with α-amino acids by substituting the sulfonic acid groups in the corresponding cellulose ethers. The effect of the nature of the solvent on the direction of the substitution reaction has been established. In dimethylformamide solution, together with the acylation reaction, a formation of amino cellulose derivatives also takes place. In phenol, methanol and their mixture, only aminoacyl cellulose derivatives are formed. (Author)

Rubinshtein, A. M., Slovetskaya, K. I., and Brueva, T. R.
ISOPROPANOL CHEMISORPTION ON MIXED CATALYSTS UPON γ -Al_2O_3 CARRIER. [1962] 5p. 13 refs.
Order from OTS or SLA $1.10 62-16568

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 139 [no. 3] p. 626-629.

DESCRIPTORS: *Propanols, *Chemisorption, *Catalysts, Catalysis, *Aluminum compounds, Oxides, Phase studies, Potassium compounds, *Alcohols.

It is shown, that the value of isopropanol chemisorption by binary catalysts on basis of Al_2O_3 and NiO, Fe_2O_3 and Cr_2O_3, in which these oxides are completely solved in γ-Al_2O_3, is equal and determined by their phase composition (i.e. disposition of the atoms and ions O in their crystalline lattice) and not by the chemical composition; third component introduction (K_2O), non changing the phase composition, has also no effect on the chemisorption value of isopropanol. The data show the main formation of alcoholate at chemisorption of isopropanol on the catalysts investigated in present work through the interaction of alcohol with the surface ions of oxygen, and not with the OH-groups. (Author)

Ryang, Moho, Miyamoto, En, and Tsutsumi, Shigeru.
REACTION OF CARBON MONOXIDE AND SODIUM PHENOLATE Rept. no. 4 of Reaction of Carbon Monoxide and Organic Metallic Compounds. [1962] 10p. 17 refs.
Order from SLA $1.10 62-14826

Trans. of [Nihon Kagaku Zasshi] (Japan) 1961, v. 82, no. 9, p. 1276-1279.

DESCRIPTORS: *Metalorganic compounds, *Carbon compounds, Monoxides, *Sodium compounds, *Phenyl radicals, Bromides, Benzenes, Organic solvents, *Magnesium compounds, Cobalt compounds, Chlorides.

The reaction of bromobenzene and metallic sodium was conducted in various solvents and carbon monoxide was released in its reaction system. Depending on the basic ity of the solvent and reaction temperatures, radical differences were found with the reaction products. Also, the reaction of carbon monoxide and phenyl magnesium bromide was conducted in the presence of cobalt chloride. (Author)

Shilov, E. A.
INTRAMOLECULAR MIGRATION OF HYDROGEN AND RADICALS IN ORGANIC REACTIONS. [1961] [1]p.
Order from OTS or SLA $1.10 61-20800

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1941, v. 30, no. 3, p. 221-224.

DESCRIPTORS: *Organic compounds, Chemical reactions, Hydrogen, Motion.

Terent'ev, A. P., Rode, V. V., and Rukhadze, E. G.
STUDIES OF CHELATE POLYMERS. I. SYNTHESIS OF CHELATE POLYMERS ON THE BASIS OF 5, 5'-METHYLENE-bis-SALICYLALDEHYDE. [1962] 11p. 28 refs.
Order from OTS or SLA $1.60 62-16626

Trans. of [Vysokomolekulyarnye Soedineniya] (USSR) 1960, v. 2, no. 10 [p. 1557-1563].
Another trans. is available from ATS $13.40 as ATS-63N48R [1960] 7p.

DESCRIPTORS: Polymers, *Chelate compounds, Methylenes, *Aldehydes, *Amines, *Imenes, Copper, Nickel, Zinc, Cadmium, Cobalt, Iron.

Improved methods have been worked out for the synthesis of 5, 5'-methylene-bis-salicylic aldehyde with a yield up to 75% of theoretical. There were obtained polymeric Schiff bases 5, 5'-methylene-bis-salicylic aldehyde with ethylenediamine, hexamethylenediamine and O-phenylenediamine. There were also obtained 23 chelate polymers of copper, nickel, zinc, cadmium, cobalt and iron with poly-5, 5'-methylene-bis-salicylalimine and poly-5, 5'-methylene-bis-salicylalethylenediimine, poly-5, 5'-methylene-bis-salicylalhexamethylenediimine and poly-5, 5'-methylene-bis-salicylal-O-phenylenedimine; except for chelate polymers on the bases of poly-5, 5'-methylene-bis-salicylal-o-phenylendiimide, all of the others have been obtained for the first time. (Author)

Ueda, Hiromiki and Ota, Masaki.
CONSTITUTION OF 3-AMINO RHODANINE. Rept. 3 of Studies on Heterocyclic Compounds Containing Sulphur. [1962] [21]p. 4 refs.
Order from SLA $2.60 62-14942

Trans. of Nihon Kagaku Zasshi (Japan) 1956, v. 77 [no. 2] p. 385-388.

DESCRIPTORS: *Heterocyclic compounds, Sulfur compounds, Nitrogen compounds, *Thiocyanic acid, Chemical reactions, Amines.

Vikhterle, O. and others.
DESTRUCTION OF POLY-6-CAPROLACTAM BY MEANS OF EXCHANGE REACTIONS BETWEEN AMIDE BONDS. [1962] 5p. (7 figs. omitted).
Order from SLA $1.10 62-16728

Trans. of mono. [Mezhdunarodnyi Simpozium po Makromolekulyarnoi Khimii: Doklady i Avtoreferaty] v. 3, Moscow, 1960, p. 380-386 (International Symposium on Macromolecular Chemistry, Moscow, 14-18 June 60).

DESCRIPTORS: *Polymers, *Lactams, Decomposition, Exchange reactions, *Amides, Chemical bonds.

Ziegler, Karl.
PROCEDURE FOR THE PRODUCTION OF POLYETHYLENE WITH HIGH MOLECULAR WEIGHT SUITABLE FOR USE AS SYNTHETIC SUBSTANCE. 30 Nov 55, 13p.
Order from OTS or SLA $1.60 62-16335

Trans. of Belgian patent 533 362, 16 Nov 54 (German appl. 17 Nov 53, 15 Dec 53, 23 Dec 53).

DESCRIPTORS: *Ethylenes, Polymers, Molecular weight, Production, Catalysts, Free radicals, Metallic compounds, Valence, Chemical reactions.

Physical Chemistry

Alekseevskii, E. V. and Musin, Ya. D.
INVESTIGATION IN THE FIELD OF RECOVERY OF VOLATILE SOLVENT VAPOURS. IV. INVESTIGATION OF THE SORPTION AND DESORPTION OF CHLORINATED ORGANIC SOLVENTS ON ACTIVATED CARBON, tr. by I. Gawronska. Courtaulds Misc. Lit. 3316; NLL M.3439.
Order from OTS or SLA $2.60 62-24849

Trans. of Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1939, v. 12, p. 704-718.

DESCRIPTORS: *Activated carbon, Organic solvents, Chlorine compounds, *Ethanes, *Ethylenes, *Chloroform, *Carbon tetrachloride, Sorption, Dynamics, Vapors.

Isobars of adsorption of $C_2H_4Cl_2$, C_2HCl_3, $CHCl_3$ and CCl_4 on carbon AG, birch carbon activated with steam and bone carbon activated with zinc chloride, were determined for two concentrations of vapours. Adsorption isotherms at 20° of $C_2H_4Cl_2$, C_2HCl_3, $CHCl_3$ and CCl_4 for the carbons examined were calculated from the experimentally determined isobars. The Lindau criterion was applied to determine the characteristics of adsorption of the vapours of chlorinated hydrocarbons on activated carbon. The adsorption dynamics of $C_2H_4Cl_2$, C_2HCl_3 and $CHCl_3$ on activated carbons were investigated and the dynamic coefficients γ, K, $\emptyset$ and η have been determined. The effect of temperature on the values of the coefficients of dynamic adsorption of $C_2H_4Cl_2$, C_2HCl_3, $CHCl_3$ and CCl_4 on various carbons were determined. (Author)

Alekseevskii, E. V. and Vanyushina, Z. S.
INVESTIGATIONS IN THE FIELD OF RECOVERY OF VOLATILE SOLVENTS ON SOLID SORBENTS. XI. DESORPTION OF SOLVENTS FROM SOLID SORBENTS WITH STEAM, THEORY OF DESORPTION, tr. by I. Gawronska. 17 Jan 62, 12p. 3 refs. Courtaulds Ltd. Misc. Lit. 3427; [DSIR] NLL M. 3606.
Order from OTS or SLA $1.60 62-25322

Trans. of Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1945, v. 18 [no. 11/12] p. 658-665.
An abstract trans. is available from OTS or SLA $1.00 in 62-14165 [1961] 7p.

DESCRIPTORS: *Organic solvents, *Benzenes, *Alcohols, Steam, Sorption, Theory, *Adsorbents, Carbon

Alekseevskii, E. V. and Vanyushina, Z. S.
INVESTIGATION IN THE FIELD OF [RECOVERY OF] VOLATILE SOLVENT VAPOURS. IX. INVESTIGATION OF THE DESORPTION OF VOLATILE SOLVENTS FROM CARBON LAYERS, tr. by I. Gawronska. 12 Sep 61 [21]p. 10 refs. Courtaulds Misc. Lit. 3370; NLL M. 3480.
Order from OTS or SLA $2.60 62-23951

Trans. of Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1945, v. 18, p. 193-206.

DESCRIPTORS: *Activated carbon, Organic solvents, Vapors, *Alcohols, *Benzenes, Sorption, Dynamics.

When adsorbed solvents are desorbed with steam from carbon the process of solvent desorption is accompanied by the process of water vapour sorption. The amount of water adsorbed by carbon during the desorption is a function of carbon layer temperature, of desorption time, adsorbing power of carbon and the kind of solvent adsorbed. The higher the carbon temperature during desorption the less the amount of water adsorbed. The amount of water adsorbed during the desorption of the solvent increases with time of desorption. The higher the adsorbability of carbon with respect to the solvent and the lower the solubility of the solvent in water, the less are the amounts of water adsorbed on the carbon during desorption. The curves of sorption kinetics of water in carbon during the desorption of solvent are similar for all carbon layers. (Author) (See also 62-24849)

Baimakov, Yu. V. and Batashev, K. P.
PLATINUM PLATING OF TITANIUM AND ITS ALLOYS. Oct 61 (2 refs. omitted) 1 ref. [DSIR] NLL M. 3657.
Order from OTS or SLA $1.10 62-25296

Trans. of Zhur[nal] Prikl[adnoi] Khim[ii] (USSR) 1961, v. 34, no. 8, p. 1879-1880.

DESCRIPTORS: *Titanium, *Titanium alloys, *Plating, *Platinum, Pickling, Spark machining, Adhesion, Corrosion inhibition, Electrolytes, Electrochemistry.

Bjerrum, J.
THE NECESSITY OF A SPECIAL ANTIBASE CONCEPT: DISCUSSION OF THE CONCEPTS OF ACIDS AND BASES, tr. by Bertha P. Klenova. 14 Feb 52 [11]p. 18 refs. TVA 3085.
Order from OTS or SLA $1.60 62-25808

Trans. of Angew[andte] Chem[ie] (West Germany) 1951, v. 63, p. 527-530.

DESCRIPTORS: *Acid-base equilibrium, Theory, Oxidation-reduction reactions, Electron capture

Boreskov, G. K. and Vasilevich, A. A.
MÉCANISME DE L'ÉCHANGE ISOTOPIQUE DE L'HYDROGÈNE SUR DES FILMS DE PLATINE (Mekhanizm Izotopnogo Obmena Vodorodna na Platinovykh Plenkakh) [Mechanism of the Isotopic Exchange of Hydrogen on Platinum Films] tr. by Kefeli. 15 Feb 62 [51]p. (Russian text included) 17 refs. CEA Trans. no. R 1491 (text in French).
Order from OTS or SLA $5.60 62-25090

Trans. in French of Kinetika i Kataliz (USSR) 1960, v. 1, no. 1, p. 69-82.

DESCRIPTORS: *Radiochemistry, Metal films, *Platinum, *Isotope separation, Hydrogen, *Tritium, Adsorption, Exchange reactions, Reaction kinetics.

Nous avons étudié l'échange isotopique dans l'hydrogène moléculaire, ainsi que l'echange entre l'hydrogène adsorbé et l'hydrogène gazeux sur pellicules de platine, à 78 et 90° K, au moyen du deutérium et du tritium. Nous avons mis en évidence l'hétérogénéité de la surface du platine par rapport à l'adsorption de l'hydrogène. Nous avons déterminé les coefficients de séparation des isotopes de l'hydrogène

lors de l'adsorption. En nous basant sur la mesure des effets cinétiques isotopiques, nous avons établi la molarité de la réaction d'échange et discuté les mécanismes possibles de ce processus. (Author)

Cherbuliez, Emile and Leber, Jean Pierre.
VOLATILITY OF ORTHOPHOSPHORIC ACID, tr, by Bertha P. Klenova. 7 May 51, 5p. 8 refs. TVA 3019.
Order from OTS or SLA $1.10 62-25780

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1950, v. 33, p. 2264-2267.

DESCRIPTORS: *Phosphoric acids, Evaporation, Vapor pressure, Thermodynamics.

At 130°C. orthophosphoric acid has a vapor pressure of a few thousandths of a millimeter, and this explains its perceptible volatility at this temperature. (Author)

Delsemme, Armand H.
THE MECHANISM OF THE EXPLOSION OF AMMONIUM NITRATE, tr. by Bertha P. Klenova. 22 Nov 50, 3p. 9 refs. TVA 2974.
Order from OTS or SLA $1.10 62-32247

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1950, v. 230, p. 1858-1860 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Ammonium compounds, *Nitrates, Decomposition, *Explosions, Spectrographic analysis

When ammonium nitrate is heated in a nonconfined atmosphere first slow decomposition and then combustion take place. When it is heated in a closed chamber the slow decomposition results in a rapid increase of pressure. When the confinement is sufficient to maintain a pressure of about 20 atmospheres, ammonium nitrate explodes upon reaching the temperature of 290°C. About 20 explosions were observed. The bands obtained gave voluminous information on the evolution of gases before the explosions. The interesting zones were located at the beginning of the far ultraviolet, in the region 1850 to 2300 A, which are conveniently accessible to photographing with plates almost void of gelatin. Systems of bands of NO and NH_3 were observed. (Author)

Enikolopyan, N. S.
THE THEORY OF DEGENERATE BRANCHING. I. KINETIC EQUATIONS OF REACTIONS WITH DEGENERATE BRANCHING, tr. by Lionel Mote. [1962] [29]p. 11 refs. TRC Trans. no. 1059; [DSIR] NLL M. 4893
Order from OTS or SLA $2.60 62-25390

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1956, v. 30, no. 4, p. 769-783.

DESCRIPTORS: *Reaction kinetics, Molecular structure, Decomposition, Catalysis, Theory.

An examination is made of the kinetics of the reaction taking place with degenerate branching, in which the substance causing degenerate branching is the final product of the decomposition. It is shown that if the substance causing degenerate branching is an intermediate product then the reaction proceeds in two sharply different stages. The reaction is initially self-accelerating, and after reaching a maximum concentration of the intermediate product, causing degenerate branching, becomes steady. Additions into the original mixture of substances, causing degenerate branching, increase only the initial rate and have no effect at all on the further progress of the reaction. A study was made of the kinetics of the reaction taking place with degenerate branching, and taking into account the consumption of the original material. (Author)

Funaki, K. and Asada, K.
ON THE HETEROGENEOUS EQUILIBRIUM OF WOLFRAM AND ITS OXIDES WITH HYDROGEN AND WATER VAPOR. [1962] [11]p. 5 refs.
Order from SLA $1.60 62-14493

Trans. of unidentified mono. (report) from Tokyo Institute of Technology [1948].

DESCRIPTORS: *Water vapor, *Hydrogen, *Oxides, *Tungsten compounds, Temperature, Chemical reactions, Reduction, *Chemical equilibrium.

Theoretical and experimental research showed that it is more reasonable to consider the process of hydrogen reduction of WO_3 as $WO_3 \rightarrow W_4O_{11} \rightarrow W_{20}O_{58} \rightarrow W_4O_9 \rightarrow WO_2 \rightarrow W_2O_3 \rightarrow WO \rightarrow W$ than by $WO_3 \rightarrow W_4O_{11} \rightarrow WO_2 \rightarrow W$ or $WO_3 \rightarrow W_2O_5 \rightarrow WO_2 \rightarrow W$.

Beginning temperature and ending temperature of each reaction in hydrogen reduction process of WO_3 are obtained. The equilibrium constants of each reaction were calculated from the experimental results obtained by Nakasawa-Okada and these figures are more constant than any so far obtained. (Author)

Kalinina, A. A. and Shamrai, F. I.
PHYSICO-CHEMICAL INVESTIGATIONS OF THE SIC-B_4C SECTION OF THE Si-B-C SYSTEM [Fiziko-Khimicheskoe Issledovanie Razreza SiC-B4C Sistemy Si-B-C]. 29 Nov 62 [10]p. 15 refs. JPRS: 16409.
Order from OTS or SLA $1.10 63-13363

Trans. of [Akademiya Nauk SSSR]. Institut Metallurgii. Trudy, 1960, no. 5, p. 151-155.
Another trans. is available from OTS $0.50 as 60-41368, JPRS-4045, 16 Sep 60, 9p.

DESCRIPTORS: *Silicon compounds, *Boron compounds, *Carbides, Carbon, Eutectics, Phase studies.

For abstract see Technical Translations 5: 181, 1961

Kleeman, W. and others.
THERMAL STABILITY OF SULPHENAMIDE VULCANISATION ACCELERATORS, Oct 62, 1500 words, 7 refs.
Order from TTIS $15.00 TTIS NS 53

Trans. of Plaste und Kautschuk (Germany) 1962, v. 9 [no. 8] p. 407-409.

DESCRIPTORS: Accelerators, Vulcanization, Stability, Temperature, Amides, *Sulfenamides.

Kuhn, Werner.
DECOMPOSITION OF AMMONIA BY UV RAYS. [1961] [22]p. (figs. tables omitted) 18 refs.
Order from SLA $2.60 62-10719

Trans. of unidentified article.

DESCRIPTORS: *Photochemistry, *Ammonia, Photolysis, Monochromatic light, *Ultraviolet radiation, Catalysts, Quartz, Sodium, Reaction kinetics.

Photochemical decomposition of ammonia was studied under the influence of monochromatic light (2025-2140 A) (zinc rays). The number of adsorbed quanta by decomposed molecule is 2 to 2.5; it is independent of the pressure, which varied from 900 to 5 mm of Hg. Velocity of decomposition is independent of the temperature between 10° and 20° C. It is independent of the presence of quartz surface and independent of the presence of Na (strict absence of traces of water). In total light the decomposition continues until the complete decomposition in H_2 and N_2 and the velocity of decomposition is proportional to the adsorbed energy. (Author)

Lapshin, B. M. and Karpikhina, I. N.
ELECTROCHEMICAL REFINING OF ZINC FROM AMALGAMS (Elektrokhimicheskoe Rafinirovanie Tsinka iz Amalgam). Sep 62 [7]p. 8 refs. RTS 2141.
Order from OTS or SLA $1.10 62-32961

Trans. of mono. Chistye Metaly i Poluprovodniki. Trudy 1-[Go] (Pervoi) Moshvuz. Konv., Moscow, 1957, p. 277-282.

DESCRIPTORS: *Mercury alloys, *Zinc alloys, Electrochemistry, Refineries.

A potentiometric research for the anode oxidation of zinc, cadmium, lead, iron and copper amalgams in zinc chloride solutions at room temperature were accomplished. Experiments on producing zinc from its amalgams were carried out. It was shown that the method of amalgam refining of zinc makes it possible to obtain zinc of a high degree of purity at a single refining operation. (Author)

Lefort, Marc and Haissinsky, Moise.
DIRECT AND INDIRECT ACTION AND ACTION OF COMPETITION OF IONIZING RADIATIONS ON THE SYSTEM ARSENITE-ARSENATE, tr. by Bertha P. Klenova. 2 Nov 50, 2p. 5 refs. TVA 2967.
Order from OTS or SLA $1.10 62-32245

Trans. of [Academie des Sciences, Paris] Compt[es] Rend[us] (France) 1950, v. 230, p. 534-536 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Radiochemistry, *Arsenic compounds, Arsenates, Oxidation-reduction reactions, Radiation effects, *Gamma rays, *X-rays

Mirolyubov, E. N.
ELECTROCHEMICAL REDUCTION OF NITRIC ACID ON INERT AND SELF-DISSOLVING CATHODES.
18 July 62 [15]p. 15 refs. FTD-TT-62-952; AD-284 102.
Order from OTS or SLA $1.60 62-33074

Unedited rough draft trans. of #Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, p. 132-138.

DESCRIPTORS: *Electrochemistry, *Nitric acid, Reduction, *Cathodes (Electrolytic cell), Polarization, Platinum electrodes, Iron, Chromium, Tin, Stainless steel.

In nitric acid solutions, apart from the evolution of hydrogen at the cathode, two electrochemical processes are possible: the reduction of nitric acid to nitrous and of nitrous acid to nitrous oxide. The cathode reduction of nitric acid to nitrous acid proceeds on an inert platinum electrode and on passive metals and alloys if the solution contains undissociated molecules of nitric acid (> 18%). The cathode reduction of nitrous acid to nitric oxide is observed on a platinum electrode in completely dissociated solutions of nitric acid upon the addition to them from without of nitrous acid, and also on other metals and alloys when they dissolve from the active state provided the products of their self-solution, are able on acidification to reduce solutions of nitric acid to nitrous acid. (Author)

Nemtsov, M. S.
KINETIC RELATIONSHIPS IN THE REACTION OF OLEFINS WITH SULFURIC ACID [Kineticheskie Zakonomernosti Vzaimodeistviya Olefinov s Sernoi Kislotoi]. Oct 61, 11p. 21 refs.
Order from ICE in v. 1, no. 1, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1960, no. 8 [p. 633-641].

DESCRIPTORS: *Chemical engineering, *Propenes, Chemical reactions, Adsorption, Reaction kinetics, *Sulfuric acid.

Ogorodnikov, S. K., Kogan, V. B., and Nemtsov, M. S.
LIQUID-VAPOR EQUILIBRIUM IN TERNARY SYSTEMS FORMED BY HYDROCARBONS C_5 WITH METHANOL, AND ALSO WITH ACETONE. Communication 5 of Investigation of C_5 Hydrocarbon Mixtures Separation by the Methods of Azeotropic and Extractive Fractionation. [1962] 7p. 4 refs.
Order from OTS or SLA $1.10 62-14821

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34 [no. 4] p. 836-841.

DESCRIPTORS: *Acetones, *Methanols, Chemical equilibrium, *Hydrocarbons, Liquids, Vapors, *Carbon, Mixtures.

On the basis of a comparison of experimental values for relative volatility coefficients in the ternary systems of hydrocarbons with methanol or acetone (methanol-isopentane-isoprene, methanol-trimethylethylene-isoprene and acetone-trimethylethylene-isoprene, acetone-isopentane-isoprene) with the respective values, calculated with data of binary systems, the possibility of liquid-vapor equilibrium calculation in ternary systems with data for binary systems with the help of the earlier proposed method, is confirmed. It is shown that addition of methanol and also of acetone to the mixtures of hydrocarbons, is provoking a comparatively small increase of relative volatility of the hydrocarbons, in connection with the application of these polar substances in pure form for extractive and azeotropic fractionations of C_5 hydrocarbons mixtures is practically unsuitable. (Author) (See also 60-17730)

Onishi, Isao, Kyoji, Homma, and Shimura, Kimiko.
THE EFFECT OF ULTRASONIC WAVES ON AQUEOUS SUSPENSION OF FIBERS. [1962] 16p.
Order from K-H $20.00 K-H 11436 g

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1954, v. 90, p. 142-149.

DESCRIPTORS: *Ultrasonic radiation, *Solutions, Water, *Fibers.

Onishi, Isao, Sasaki, Toshiro, and Tokura, Chie.
STUDIES ON THE PHYSICAL AND CHEMICAL CHANGES PRODUCED IN TOBACCO LEAVES BY SIMULTANEOUS APPLICATION OF PRESSURE AND HIGH FREQUENCY WAVES, PT. I. [1962] 32p.
Order from K-H $40.00 K-H 11436 d

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1954 [v. 90] p. 86-100.

DESCRIPTORS: *Tobacco, Chemical analysis, *Physical chemistry, Pressure, High frequency.

Or, L. de.
DETERMINATION OF THE MOLECULAR WEIGHTS OF SYNTHETIC POLYMERS. [1962] 9p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-18234

Trans. of Rev[ue] Gen[èrale] du Caoutchouc (France) 1947, v. 24 [no. 12] p. 425-431.

DESCRIPTORS: Determination, *Molecular weight, *Polymers, Osmotic pressure, Ultracentifuges, Spectographic analysis.

Ouweltjes, J. L.
GRAIN SIZE OF INORGANIC PRECIPITATES, tr. by Bertl[ ]P. Klenova. 15 Nov 54, 4p. 5 refs. TVA 3363.
Order from OTS or SLA $1.10 62-25794

Trans. of Chem[isch] Weekblad (Netherlands) 1951, v. 47, p. 623-626.

DESCRIPTORS: *Inorganic substances, *Phosphates, Precipitation, Particles, Measurement.

Panchenkov, G. M., Makarov, A. V., and Rozynov, B. V.
ON THE KINETICS OF BORON ISOTOPE EXCHANGE BETWEEN BORON TRIFLUORIDE AND ITS ANISOLE COMPLEX. [1962] 8p. 5 refs.
Order from OTS $1.10 AEC-tr-4825

Trans. of Mos[cow] U. Vest[nik]. Ser[iya] 2: [Khimiya] (USSR) 1960, v. 15, no. 3, p. 7-10.

DESCRIPTORS: *Boron, Isotopes, *Exchange reactions, Reaction kinetics, Boron compounds, Fluorides, *Complex compounds, *Anisole, Phase studies.

An apparatus is described for studying heterogeneous isotope gas-liquid exchange under conditions of intensive mixing of both phases. It was confirmed that isotope equilibrium in the exchange of boron fluoride and its anisole complex is established in the course of several minutes when the phases are mixed. (Author)

Pavlov, P. N. and Pavlenko, G. Ya.
DOSAGE POLAROGRAPHIQUE DU ZINC ET DU NICKEL EN LEUR PRESENCE SIMULTANÉE, tr. by Kefeli. 3 July 61 [11]p. CEA Trans. no. R 1266 (text in French).
Order from OTS or SLA $1.60 62-33266

Trans. in French of Zh[urnal] Obshch[ei] Khim[ii] (USSR) 1937, v. 7, no. 17, p. 2259-2263.

DESCRIPTORS: *Electrochemistry, *Zinc, *Nickel, Electrodeposition, Polarization, Electric potential, Gelatin, Ammonia.

Rivin, M. A.
EFFECT OF ADMIXTURES ON THE DETONATION OF A MIXTURE OF METHANE AND AIR. [1961] [2]p. 4 refs.
Order from OTS or SLA $1.10 61-20815

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1941, v. 30, no. 6, p. 500-501.

DESCRIPTORS: *Methane, Air, Mixtures, Detonation, Ignition.

Rotinyan, A. L. and Shilov, E.
KINETICS OF OXIDATION-REDUCTION POTENTIALS [AND] CATALYTIC INFLAMMATION OF CHLORINE-ETHYLENE MIXTURES. [1962] 2p.
Order from OTS or SLA $1.10 62-10779

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 46, no. 2, p. 60-65.

DESCRIPTORS: *Oxidation-reduction reactions, Reaction kinetics, Catalysis, *Chlorine, *Ethylenes, Mixtures.

Salvinien, J., Marignan, R., and Cordier, Suzanne.
DIFFUSSION OF TAGGED DISODIUM PHOSPHATE IN A CHEMICALLY HOMOGENEOUS MEDIUM, tr. by Bertha P. Klenova. 31 Mar 54, 3p. TVA 3274.
Order from OTS or SLA $1.10 62-32263

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1954, v. 238, p. 888-890 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: Labeled substances, *Sodium compounds, *Phosphates, Diffusion, Gelatin, *Gels.

The study of diffusion with the aid of radioactive tracers in a chemically homogeneous medium is of major interest, because this is the best method for deriving the true variations of the diffusion coefficient as a function of the concentration. This method was used in the study of diffusion of disodium phosphate in a gelatin gel. (Author)

Schrama, J.
THE DEFINITION OF pH, tr. by Bertha P. Klenova. 6 Sep 51, 30p. 32 refs. TVA 3036.
Order from OTS or SLA $2.60 62-25793

Trans. of Chem[isch] Weekblad (Netherlands) 1951, v. 47, p. 169-178.

DESCRIPTORS: *Hydrogen ion concentration, Theory, Determination, Error, Acids, Ions, Thermodynamics.

No thermodynamic properties of an aqueous solution are known which would characterize in a suitable manner and correctly the acidity of the solution. The pcH defined by Sörensen is a non-thermodynamic magnitude, and it is probably the most suitable measure of the acidity of a solution. In certain instances it can be determined clearly from the absorption spectra; in the majority of cases, however, the pcH is not accessible to measurement. The only possible definition of pH, that is both generally applicable and tenable physically, is the formulation of a measuring method and the specification of constants with which the pH can be derived from the results of the measuring method. (Author)

Schwab, G. M., Zentelis, D., and Kassapoglou, G.
STUDIES OF CONDUCTIVITY IN CONCENTRATED SULFURIC ACID, tr. by Bertha P. Klenova. 9 July 52, 8p. 7 refs. TVA 3108.
Order from OTS or SLA $1.10 62-25790

Trans. of Chem[ische] Ber[ichte] (West Germany) 1952, v. 85, p. 508-514.

DESCRIPTORS: *Electrochemistry, *Sulfuric acid, Electrical conductance, Sodium compounds, Sulfates, Water, Dissociation.

Measurements were made of the specific conductivity of sulfuric acid of least conductance and of the variations that occur upon addition of sodium bisulfate and of water. Sodium bisulfate at first decreases the conductivity, and it increases only at higher concentrations Both the specific conductivity of sulfuric acid and the effect of additions are expressed by means of dissociation equations of the reactants with the formation of the common HSO_4^- anion. Values are obtained for the limiting conductivity of the three compounds at infinite dilution and their gradation, compared with the conditions in aqueous solution, is discussed. (Author)

Semenov, N. N.
ALLOWANCE FOR CHAIN RUPTURE ON THE WALLS OF A REACTION VESSEL IN THE CASE OF OXIDATION OF HYDROGEN. Pt. 3 of Types of Kinetic Curves in Chain Reactions. [1962] [1]p.
Order from OTS or SLA $1.10 62-10769

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 44, no. 6, p. 241-245.

DESCRIPTORS: Petroleum, *Hydrogen, Oxidation, *Chain reactions, *Reaction kinetics.

Semiokhin, I. A., Kobozev, N. I., and Pitskhelauri, E. N.
THE REACTION OF HYDROGEN WITH OXYGEN IN SILENT ELECTRICAL DISCHARGE. 24 July 62 [14]p. 4 refs. FTD-TT-62-951; AD-284 121.
Order from OTS or SLA $1.60 62-33073

Unedited rough draft trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1962, v. 36, no. 1, p. 72-80.

DESCRIPTORS: *Electric discharges, *Hydrogen, *Oxygen, Chemical reactions, Reaction kinetics.

Using test data we made a kinetic analysis of the reaction of hydrogen with oxygen in silent electrical discharge. In view of the excess of hydrogen in the gas mixture, the analysis was done according to the rate of oxygen consumption. In accordance with the specificity of activation in the electrogaseous reactions, we assumed first order for these reactions for the calculation of the kinetics of the H_2O_2 formation and decomposition. Due to the special conditions in silent electric discharge (small current density, energy, etc.) the irreversibility of the process is emphasized. It was found that the kinetics of a process in an all-glass reactor can be satisfactorily calculated by using equations of consecutive irreversible reactions of the first order. (Author)

[Shtekkel'] F. A. and [Tsin] N. M.
DETERMINATION OF THE LIQUID-VAPOR EQUILIBRIUM DIAGRAM OF A METHANE-NITROGEN-HYDROGEN SYSTEM (Opredelenie Diagramm Sostoyaniya Zhidkost'-Par Sistemy Metan-Azot-Vodorod). [1962] 19p. 5 refs.
Order from OTS or SLA $1.60 62-18765

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1939, v. 16, no. 8, p. 24-28.
Other translations are available from SLA as R-4424, 15p. and from ATS as RJ-184.

DESCRIPTORS: Determination, Chemical equilibrium, *Liquids, *Vapors, Separation, *Coke, *Hydrogen, *Methanes, *Nitrogen, Mathematical analysis, Industrial equipment.

Sokolov, V. N., Poddubnyi, I. Ya. and others.
THE POLYMERIZATION OF NITROETHYLENE BY γ-RAYS. 7 May 62 [7]p. 9 refs. FTD-TT-62-296.
Order from OTS or SLA $1.10 62-33368

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 138, no. 3, p. 619-620.

DESCRIPTORS: *Radiochemistry, Nitro radicals, *Ethylenes, Polymerization, Gamma rays, X-ray diffraction analysis.

It was established that the partially polymerized nitroethylene samples continue to polymerize even after radiation has ceased. This allows us to conclude that relatively long-lived polymer radicals from under the effect of γ-rays. Polynitroethylene blocks also form during post-radiation polymerization. Polymerization of nitroethylene under the action of γ-rays is inhibited by hydroquinone and oxygen; this is another indication of its radical character. The radiation polynitroethylene obtained is insoluble in the usual solvents, but is easily soluble in N, N-dimethylformamide; its characteristic viscosity in this solvent is 0.38, which corresponds to a molecular weight of 38,000. The density of the polynitroethylene block d_{20} is 1.535, the decomposition temperature is 150°. Elementary analysis of the polymer shows that there is no denitration during radiation: $(-CH_2-CHNO_2^-)_n$. X-ray analysis of the polymer showed that it contains no crystal phase. Under γ-radiation, nitroethylene is easily copolymerized with other unsaturated nitrocompounds, e.g., 1,4-dinitro-1,3-butadiene.

Temkin, M.
CONCERNING THE EQUATION OF STATE FOR GASEOUS MIXTURES GIVEN BY KRICHEVSKII AND KAZARNOVSKII. [1962] 3p. 6 refs.
Order from OTS or SLA $1.10 62-16811

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1943, v. 17, no. 4, p. 269-270.

DESCRIPTORS: *Gases, Thermodynamics, *Equations of state.

It is shown that the empirical equation $P = P_1^O N_1 + P_2^O N_2 + A_{12}(P_1^O - P_2^O) N_1 N_2$, proposed by Krichevskii and Kazarnovskii (Zhur. Fiz. Khim. 13: 378, 1939) can also be derived theoretically under the conditions that deviations from the laws of ideal gases are small. Here P is the pressure of the mixture in molar volume v, P_1^O and P_2^O are pressures of pure components at the same molar volume, N_1 and N_2 are molar fractions, and A_{12} is a constant.

Tomassi, W.
THEORETICAL PRINCIPLES OF THE OPERATION OF POWDER ELECTRODES AND THE POSSIBILITIES OF THEIR APPLICATION. [1962] 13p. 17 refs.
Order from SLA $1.60 62-16451

Trans. of Przemysl Chemiczny (Poland) 1956, v. 12[35] [no. 9] p. 520-522.

DESCRIPTORS: *Electrodes, *Electrochemistry, Powder metals, Electric potential, Potential theory, Powders.

Veits, I. V. and Gurvich, L. V.
ON THE DISSOCIATION ENERGIES OF MOLECULES OF THE OXIDES OF THE ALKALINE EARTH ELEMENTS (K Voprosu ob Energhyakh Dissotzyatzii Molekul Okislov Shchelochno-Zemel'nykh Elementov) tr. by D. A. Nimidoff. Aug 61, 16p. 25 refs.
Order from OTS or SLA $1.60 UCRL Trans-708

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1957, v. 31, no. 10, p. 2306-2309.

DESCRIPTORS: *Alkaline earth compounds, *Calcium compounds, *Strontium compounds, Oxides, Dissociation, Combustion, Molecules, Energy.

The dissociation energies of C_aO and S_rO were determined by measuring the reaction equilibrium constant of dissociation reaction in the CO + O_2 flame, where the partial pressures of the hydroxyl are much lower than in other flames having a temperature of about 3000°K. By comparing the values of $D_o(C_aO)$ and $D_o(S_rO)$, obtained with varying hydroxyl content in the flame, it was found that the presence of C_aOH or S_rOH molecules had no influence on the dissociation energy of calcium oxide or strontium oxide respectively. The temperature of the gases in the external cone of the CO + O_2 flame, measured according to Ornstein, was in good agreement with the theoretically computed equilibrium temperature. (Author)

Wada, Einosuke, Kyoji, Yamasaki and others.
STUDIES ON THE TOBACCO ALKALOIDS INFRARED ABSORPTION SPECTRA OF THE TOBACCO ALKALOIDS AND SOME RELATED COMPOUNDS. [1962] 27p.
Order from K-H $33.75 K-H 6445 e

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1957, v. 97, p. 27-39.

DESCRIPTORS: *Tobacco, Nicotine, *Alkaloids, *Infrared spectroscopy, *Absorption spectra.

Zapletal, Vladimir, Jedlicka, Josef, and Ruzicka, Vlastimil.
THERMAL DECOMPOSITION OF SOME METAL FORMATES. [1962] [3]p. (1 fig. refs. omitted).
Order from SLA $1.10 62-16201

Trans. of Chem[icke] Listy (Czechoslovakia) 1956, v. 50 [no. 9] p. 1406-1409.

DESCRIPTORS: *Complex compounds, *Formates, Pyrolysis, Dehydration, Metals, Copper compounds, Nickel compounds, Cobalt compounds, Zinc compounds, Cadmium compounds, Manganese compounds, Magnesium compounds, Calcium compounds, Strontium compounds, Barium compounds.

The temperatures of a dehydration and a decomposition of formates of divalent cations Cu, Ni, Co, Zn, Cd, Mn, Mg, Ca, Sr and Ba were determined by using differential thermal analysis and gravimetric thermal analysis. (Author)

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 25 (EARTH SCIENCES SERIES). 17 Dec 62 [26]p. JPRS: 16720.
Order from OTS or SLA $2.60 63-13550

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, Poland, and Rumania.

DESCRIPTORS: *Abstracts, *Geodesy, *Mapping, *Geology, Minerals, Paleoecology, Terrain, Mining engineering, *Czechoslovakia, *Poland, *Rumania.

DOKLADY OF THE ACADEMY OF SCIENCES OF THE USSR. EARTH SCIENCES SECTION, 1960, VOL. 135, NOS. 1-6. Nov 61, 1v.
Order from AGI $8.00, $45.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 135, no. 1, p. 65-[72] 146-[178]; no. 2, p. 298-[307] 391-[437] 443-[444]; no. 3, p. 581-[583] 675-[727]; no. 4, p. 917-[963] 968-[970]; no. 5, p. 1120-[1126 1191-[1239]; no. 6, p. 1378-[1381] 1453-[1504].

DESCRIPTORS: *Geochemistry, *Geology, *Geophysics, *Hydrology, *Stratigraphy, *Paleoecology, *Petrology, *Mineralogy.

STUDIES AND CONFERENCES ON EARTH SCIENCES. 17 Dec 62 [33]p. JPRS: 16699.
Order from OTS or SLA $3.60 63-13543

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1962, no. 5, p. 83-89. 127-137, 184-187.

DESCRIPTORS: *Geophysics, Mountains, *Glaciers, Melting, Rivers, Drainage, *Hydrology, Asia, *Symposia, Geography, Geology, Oceanography, Meteorology, *Climatology, Artificial precipitation.

Contents:
Artificial intensification of the melting of mountain glaciers for increasing the runoff of rivers in Central Asia, by G. A. Avsyuk
Earth sciences and the problems of transforming nature, by A. G. Doskach
Conference on the Problem of Climatic Transformation (no. 2) June 62, by A. P. Gal'tsov and others.

Shebalin, N. V.
INTENSITY, MAGNITUDE, AND FOCAL DEPTH OF EARTHQUAKES. 17 May 62, 2p. AID Rept. 62-65.
Order from OTS or SLA $1.10 62-25145

Abstract trans. of mono. Zemletryaseniya v SSSR (Earthquakes in the USSR) Moscow, 1961, p. 126-138.

DESCRIPTORS: Geophysics, *Earthquakes, *Seismic waves, Determination, Nomographs.

Thilo, E.
THE CONSTITUTION OF SILICATES, tr. by Bertha P. Klenova. 2 July 51, 17p. 27 refs. TVA 3028.
Order from OTS or SLA $1.60 62-25811

Trans. of Angew[andte] Chem[ie] (West Germany) 1951, v. 63, p. 201-206.

DESCRIPTORS: *Minerals, *Silicates, Chemical properties, Molecular structure, Calcium compounds, Sodium compounds, Chemical reactions.

The structures and the principles of formation of most silicate minerals are known, but knowledge of the relationships between the chemical properties and the construction principles of silicates is very scant. A constitutional chemistry of silicates in the proper meaning of the term does not exist, since methods for their systematic formation and decomposition are not available. The results of experiments to bridge this gap are discussed herein. Starting with simply constructed "neutral" monosilicates of known or provable constitution, attempts were made to obtain definite "acid" salts by stepwise hydrolysis, to convert these salts with intermolecular liberation of water into silicates having a polymeric anion, and to decompose these silicates to monosilicates. (Author)

Troitskaya, V. A.
"EARTH STORMS" AND THE GEOPHYSICAL ASPECTS OF COSMIC RADIATION. [1962] 5p. 1 ref.
Order from OTS or SLA $1.10 62-18806

Trans. of Akad[emiya] Nauk SSSR. Vestnik, 1962 [v. 32] no. 3, p. 51-55.
Another trans. is available from NRCC as NRCC C-4024, DSIS-T-373-R, June 62, 5p.

DESCRIPTORS: Ionospheric disturbances, *Storms, *Earth, *Magnetic storms, *Geophysics, Sun, *Cosmic rays.

Climatology and Meteorology

METEOROLOGY AND HYDROLOGY, 1962, NO. 1: SELECTED ARTICLES. 4 Apr 62 [36]p. 64 refs. JPRS: 13319.
Order from OTS or SLA $3.60 62-23802

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 1, p. 41-42, 50-56, 60-63.

DESCRIPTORS: *Meteorology, *Hydrology, Weather station, Agriculture, Earth, Planets, Thermal radiation, Albedo (Astronomy), Reflection, Bibliography, Oceanology, Marine meteorology.

Contents:
Experience in the agrometeorological servicing of collective and state farms by stations of the hydrometerological service, by V. F. Pokrovskaya
The radiation balance of the earth as a planet, by K. Ya. Kondrat'ev
Literature on meteorology, hydrology and oceanography for 1961.

METEOROLOGY AND HYDROLOGY, 1962, NO. 10: SELECTED ARTICLES. 28 Dec 62 [48]p. 233 refs. JPRS: 16905.
Order from OTS or SLA $4.60 63-13635

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 10, p. 28-36, 50-52, 57-64.

DESCRIPTORS: *Meteorology, *Hydrology, Literature, *Thermal radiation, Weather forecasting, *Atmospheric motion, Upper atmosphere, Meteors, Drift, *Boundary layer, *Physics, Oceanography, Symposia, Scientific research, Personnel, Awards.

Contents:
On the use of satellite-obtained radiation measurements in synoptic analysis, by V. G. Boldyrev
Atmospheric currents at altitudes of 80-100 KM from observations of the drift of meteor trains, by A. P. Savrukhin
Physics of the atmospheric boundary layer, by D. L. Laikhtman
Literature on meteorology, hydrology and oceanography published in 1961
At the World Meteorological Organization in Geneva
Conferences, meetings and seminars
In the scientific research institutions of the hydrometeorological service
Awards, by V. M. Sklyarov.

NEWS OF THE ACADEMY OF SCIENCES USSR, GEOPHYSICAL SERIES, 1962, NO. 10: [SELECTED ARTICLES]. 17 Dec 62 [35]p. 25 refs. JPRS: 16711.
Order from OTS or SLA $3.60 63-13547

Trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1962, no. 10, p. 1425-1440 and 1450-1455.

DESCRIPTORS: *Geophysics, Atmospheric motion, *Wind, Velocity, Anemometers, Acoustic equipment, Frequency analyzers, Pulse analyzers, *Clouds, Microstructure, *Magnesium compounds, *Oxides, Coatings, Cumulonimbus clouds, Electric fields, *Ice, Crystallization, Drops, Coagulation, Atmospheric precipitation, Aerosols, *Silver compounds, *Iodides, Water, Freezing.

Contents:
Frequency spectra of pulsation of the horizontal component of wind velocity in the ground layer of air, by S. L. Zubkovskii
The transfer coefficient determined by comparing the size of impressions on tapes covered with a layer of magnesium oxide or without special covering, to the diameter of drops, by Huang Mei-yuan
Formation of rime on frozen drops of water in an electrical field, by V. M. Muchnik and Yu. S. Rud'ko
Crystallization of supercooled water by silver iodide, by V. N. Balabanova and T. N. Zhigalovskiya.

Antipov, V. P. and Loginov, N. F.
METHOD OF CALCULATING THE HEIGHT OF ASCENT OF RADIOSONDES WITH CONSIDERATION OF THE STRENGTH OF THE BALLOONS AT LOW TEMPERATURES, tr. by George F. Hill. 22 Dec 61 [12]p. 2 refs. ARGMA Trans Nr 73-61.
Order from OTS or SLA $1.60 62-15512

Trans. of Meteorologiya i Gidrologiya (USSR) 1958, no. 7, p. 11-17.

Another trans. is available from LC or SLA mi $1.80, ph $1.80 as 59-11523, JPRS(DC)-675, 24 Apr 59, 10p.

DESCRIPTORS: *Radiosondes, Meteorological instruments, *Meteorological balloons, Balloons, Temperature, Height finding, Mechanical properties, Elasticity.

Ariel', N. Z. and Klyuchnikova, L. A.
AN OPERATIONAL METHOD OF CALCULATING THE WIND PROFILE IN THE BOUNDARY LAYER OF THE ATMOSPHERE (Operativnyi Raschet Profilya Vetra v Pogranichnom Sloe Atmosfery) tr. by Myron Ricci.
Dec 61 [6]p. AmMetSoc T-R-381+; AD-283 533.
Order from OTS or SLA $1.10 62-32901

Trans. of Glavnaya Geofizicheskaya Observatoriya [Leningrad]. Trudy (USSR) 1960, no. 94[156] p. 39-41.

DESCRIPTORS: *Atmosphere, Boundary layer, *Wind, Velocity, Stratification, Pressure, Meteorological data, Mathematical analysis, Numerical methods and procedures, Barometric pressure.

During the stationary state the velocity and direction of the wind at all heights are determined by the pressure gradient, by the force of turbulent friction, and by the deviating force of the earth's rotation. Using the dependence of turbulent friction on temperature stratification, the wind velocity and surface roughness were determined from the solution of the dynamic equations of the values of the wind vector at different heights. Moreover it is natural that the wind profile depends on thermal stratification, the value of the gradient wind which is proportional to the horizontal gradient of sure and roughness. A table is given in this work to calculate the profile of wind velocity according to data on the wind at one level or on the basis of the value of the gradient wind. (Author)

Berlyand, M. E. and Kim, Sin-mun.
THE THEORY OF THE TRANSFORMATION OF AIR MASSES ABOVE THE SEA (K Teorii Transformatsii Vozdushnykh Mass nad Morem') tr. by Myron Ricci.
Dec 61 [12]p. 3 refs. AmMetSoc T-R-386+; AD-283 538
Order from OTS or SLA $1.60 62-32902

Trans. of Glavnaya Geofizicheskaya Observatoriya [Leningrad]. Trudy (USSR) 1960, no. 94[156] p. 138-144.

DESCRIPTORS: *Air mass analysis, Heat transfer, Air, Temperature, Moisture, Attenuation, Diurnal variations, Transformations, Sea water, Meteorology, Weather forecasting, Theory, *Marine meteorology

This article gives the results of an investigation of the transformation of air masses which move from the land to the sea, with a consideration of local and advective air temperature changes. Conclusions are drawn concerning the degree of attenuation of the diurnal variations of air temperature above the sea as the distance from the shore increases.

Glushkova, N. I. and Lapcheva, V. F.
THE PROBLEM OF FORECASTING SHOWERS AND HAIL ORIGINATING IN AIR-MASS CUMULUS CONGESTUS CLOUDS. [1962] 5p.
Order from ATS $7.50 ATS-35P64R

Trans. of El'brusskaya Vysokogornaya Ekspeditsiya (1934-60). [Trudy] (USSR) 1961, no. 2(5) p. 195-198.

DESCRIPTORS: *Weather forecasting, Air mass analysis, *Cumulus clouds, Clouds, *Rainfall, *Hail.

Gubin, V. I.
HYDRODYNAMIC THEORY OF FRONTOGENESIS. 1962, 96p. 58 refs. PL-480 Comm.
Order from OTS $1.00 61-11469

Trans. of mono. K Gidrodinamicheskoi Teorii Frontogeneza, Tashkent, 1960 [141p.].

DESCRIPTORS: *Hydrodynamics, *Air mass analysis, *Meteorology, Vortices, Cyclones, Anticyclones, Weather forecasting, Digital computers, Scheduling.

Contents:
The distribution of meteorological elements in frontal zones
Individual frontogenesis
Local frontogenesis
Frontogenesis and vorticity
Calculation of frontogenetical and cyclogenetical functions on electronic computers.

Kiryukhin, B. V. and Sulakvelidze, G. K.
THE MECHANISM OF HAIL AND SHOWER FORMATION WITH VARIATION IN THE VELOCITY OF ASCENDING CURRENTS IN CLOUDS TAKEN INTO ACCOUNT. [1962] 7p.
Order from ATS $12.60 ATS-32P64R

Trans. of El'brusskaya Vysokogornaya Ekspeditsiya (1934-60). [Trudy] (USSR) 1961, no. 2(5) p. 169-174.

DESCRIPTORS: *Clouds, Air mass analysis, Velocity, *Hail, *Rainfall, Atmospheric precipitation, Atmospheric motion, Precipitation.

Litvinov, I. V.
PROBLEMS OF METHODOLOGY IN THE STUDY OF THE SPECTRAL DISTRIBUTION OF CLOUD PARTICLES. [1962] 6p.
Order from ATS $11.50 ATS-30P64R

Trans. of El'brusskaya Vysokogornaya Ekspeditsiya (1943-60). [Trudy] (USSR) 1961, no. 2(5) p. 87-92.

DESCRIPTORS: *Clouds, Particles, Distribution, *Spectroscopy.

Lyutsarev, S. V.
INSTRUMENT FOR DETECTING CARBON DIOXIDE IN ATMOSPHERIC AIR. 5 Sep 62 [9]p. 4 refs.
FTD-TT-62-1190; AD-286 602.
Order from OTS or SLA $1.10 62-33624

Unedited rough draft trans. of Akademiya Nauk SSSR. Institut Okeanologii. Trudy, 1961, v. 47, p. 199-[200?].

DESCRIPTORS: *Gas detectors, *Carbon dioxide, Atmosphere, Titration, *Meteorological instruments.

A chemical gas-analyzer with a titrometric ending permits the multiple passage of the same gas sample through an absorbtion solution and attains the most complete absorbtion of 100% of the gas under investigation. The reproducability of the separate experiments at a concentration of CO_2 in the gas of approximately 0.03% consists of 2% relative. The gas-analyzer permits the detection of CO_2 in a small volume of gas (50 cm). Sea pitching does not effect the operation of the device. (Author)

Matveev, L. T.
SOME PROBLEMS OF THE THEORY OF THE FORMATION AND EVALUATION OF STRATIFORM CLOUDS (Nektorye Voprosy Teorii Obrazovaniya i Evolyutsii Sloistoobraznoi Oblachnosti) tr. by R. M. Holden. Nov 61 [41]p. 19 refs.
AmMetSoc T-R-372+, AD-283 534
Order from OTS or SLA $4.60 62-32931

Trans. of Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Trudy, 1959, v. 228, p. 14-37 Another trans. is available from OTS or SLA $13.50 in 61-28620, JPRS-10330, 5 Oct 61 [197]p.

DESCRIPTORS: *Clouds, Stratification, *Air mass analysis, Height finding, *Atmosphere, Boundary layer, Moisture, Heat transfer, Turbulence, Wind, Velocity, Meteorological data, Theory.

Voronets, V. M.
METHODS OF RADAR INVESTIGATION OF PRECIPITATION. [1962] 7p.
Order from ATS $10.50 ATS-33P64R

Trans. of El'brusskaya Vysokogornaya Ekspeditsiya (1943-60). Trudy (USSR) 1961, no. 2(5) p. 180-186.

DESCRIPTORS: *Meteorological radar, *Atmospheric precipitation, Precipitation.

Geodesy

GEODESY AND AEROPHOTOGRAPHY, 1962, NO. 1. [1962] 73p.
Order from AGU $7.50, $20.00/year

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka (USSR) 1962, no. 1, p. 3-[123].

DESCRIPTORS: *Geodesics, *Aerial photography, *Periodicals.

Fyalkov, D. A.
CONFERENCE OF THE SIBERIAN TOPOGRAPHERS (NO. 1) [NOVOSIBIRSK, 14-19 NOV 62]. 17 Dec 62 [9]p. JPRS: 16729. NASA N63-10974.
Order from OTS or SLA $1.10 63-13552

Trans. of Geologiya i Geofizika (USSR) 1962, no. 8, p. 133-134.

DESCRIPTORS: *Geodesics, Geology, Mapping, Conferences.

The conference was devoted to new techniques and technology of topo-geodetic work and to their introduction for geological objectives. The activities and resolutions are summarized.

Khublarova, S. L.
AN ALGORITHM FOR SOLVING LARGE SYSTEMS OF NORMAL EQUATIONS BY MEANS OF A MULTI-GROUP METHOD ON AN ELECTRONIC COMPUTER. 7 Dec 62 [44]p. 6 refs. JPRS: 16566. NASA N63-10976
Order from OTS or SLA $4.60 63-13462

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros"emki i Kartografii. Trudy (USSR) 1962, v. 147, p. 17-33.

DESCRIPTORS: *Geodesics, Equations, Algebra, Mathematical computer data, Numerical methods and procedures, Digital computers, *Programming (Computers), Scheduling.

An algorithm was developed for the Ural-1 computer for solving systems of normal equations in order to adjust second-order triangulation networks in a first class polygon (of practically any size) filled by sections.

Yukhin, I. I.
METHOD OF OPTICAL COMPENSATION OF LINEAR DISPLACEMENT IN PANORAMIC PHOTOGRAPHY. 27 Dec 62 [17]p. 3 refs. JPRS: 16853.
Order from OTS or SLA $1.60 63-13637

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka (USSR) 1961, no. 3, p. 127-138.

DESCRIPTORS: *Aerial photography, Photography, Aerial cameras, *Panoramic cameras, *Optical equipment, Mirrors, Rotation.

The article examines the theory of angular optical compensation of the linear displacement of the image in plane-panoramic photography and presents a kinematic principal scheme of compensating using a mirror, with some delineation of its kinematic elements, for one of the possible schemes of pancramic aerial photography. (Author)

Geography

GREAT SOVIET WORLD ATLAS, VOL. 2, PT. 2. [1961] [115]p. (maps omitted).
Order from OTS or SLA $9.60 61-10708

Trans. of mono. [Bolshoi Sovetskii Atlas] v. 2, pt. 2, n.p., n.d.

DESCRIPTORS: Geography, Industry, *Agriculture, *Economics, Terrain, Minerals, Transportation, Power plants, Population, Urban areas, Geology, *History.

(See also 61-10707)

Dudas, Gyula.
THE INDUSTRIAL GEOGRAPHY OF THE CHINESE PEOPLE'S REPUBLIC. 2 Jan 62 [51]p. JPRS: 11757.
Order from OTS or SLA $5.60 62-15365

Trans. of Foldrajzi Kozlemenyek (Hungary) 1961, v. 9, no. 2, p. 153-168.

DESCRIPTORS: Geography, *Maps, *Industry, *Economics, *China, Coal, Mineral oils, Shale, Electric power production, Iron industry, Steel industry, Machines, Chemical industry, Construction, Textile industry, Food.

Contents:
Heavy industry (Coal mining; mineral oil and oil shale production; Electric power production, Ore mining; Pig iron and steel production; Non-ferrous metallurgy; Machine production; Chemical industry; Construction industry.)
Light industry (Textile industry; Food industry; Other light industrial branches.)

Ped', D. A. and Turketti, Z. L.
ATLAS OF THE DIURNAL AMPLITUDES OF AIR TEMPERATURE IN THE USSR: ANNOTATION AND FOREWORD. 13 Dec 62 [19]p. JPRS: 16667.
Order from OTS or SLA $1.60 63-13533

Trans. of mono. Atlas Sutochnykh Amplitud Temperatury Vozdukt v SSSR, Leningrad, 1962, p. 2-11.

DESCRIPTORS: Air, *Temperature, Diurnal variations, *Maps.

The atlas gives maps for the distribution of the mean, highest and lowest diurnal amplitudes of the temperature of air at various overcasts of the sky. The maps are organized by months throughout the whole territory of the USSR. The atlas is designed to be used by a broad circle of geophysicists, meteorologists, geographers, who are directly associated with weather forecasting, and also by weather forecasters. (Author)

Geology

AN OUTLINE OF STRATIGRAPHY [WITH EXPLANATION]. 2 Jan 63 [72]p. JPRS: 16932.
Order from OTS or SLA $7.60 63-13672

Trans. of mono. Ti Ts'eng Kuei Fan Ts'ao An Chi Ti Ts'eng Kuei Fan Ts'ao An Shuo Ming Shu, Peiping, 1960, 33p.

DESCRIPTORS: *Geology, *Geological time, *Geologic age determination.

"An Outline of Stratigraphy" contains four parts: (1) Stratigraphic divisions; (2) Division of geological time; (3) Stratigraphic symbols; (4) Draft rules governing the naming of special stratigraphic units. (Author)

Chu, Chen-ta, Ch'en, Chih-p'ing and others.
SURVEY METHODS ON SHIFTING SAND TOPOGRAPHY IN DESERT REGIONS. 11 Dec 62 [95]p. (Photos. omitted) 45 refs. JPRS: 16637.
Order from OTS or SLA $8.60 63-13507

Trans. of unidentified Chinese language mono. Scientific Press, Peiping, Sep 61, p. 1-57.

DESCRIPTORS: *Deserts, *Sand, *Terrain, Drift, Geology, Morphology, Geography, Wind, Handbooks.

Chapter headings are: (1) The basic objective and practical significance of shifting sand topography investigations in desert regions, (2) methods of investigating shifting sand topography in desert regions, and (3) evaluation of data on shifting sand topography in desert regions.

Egorov, L. S. and Surina, N. P.
CARBONATITE BODIES IN SEDIMENTARY CARBONATE ROCKS (Pervaya Nakhodka Karbonatitovykh Tel v Osadochnykh Karbonatnykh Porodakh). Sep 62 [5]p. 1 ref. RTS 2142.
Order from OTS or SLA $1.10 62-32962

Trans. of [Nauchno-Issledovatel'skii] Inst[itut] Geolog[ii] Arktiki. Inform[atsionnyi Byulleten' (USSR) 1958, no. 12, p. 31-33.

DESCRIPTORS: *Geological survey, Siberia, *Carbonates, Rock, *Minerals, Stratification.

In the summer of 1958 some exposures of carbonatites were observed among dolomites of the Kyndyn formation (Middle Cambrian) during the course of a survey around the Ambadaakh intrusions (on the east bank of the Atyrdyak, 6 km above its confluence with the Ambadaakh, a left tributary of the Maimech). This observation of carbonatite bodies in sediments extends very greatly the area in which one may hope to find new carbonatite areas in N. Siberia, for exploration has previously been confined to the edges of exposed alkaline and ultrabasic intrusions.

Hemala, M., Marek, J., and Valcikova, Z.
APPLICATION OF THE POLAROGRAPHIC METHOD TO THE ANALYSIS OF OIL-WELL WATER: DETERMINATION OF SOME ANIONS (IODIDES, BROMIDES AND SULPHIDES). [1962] 12p.
Order from SLA $1.60 62-14566

Trans. of Ustav pro Naftovy Vyzkum. Prace. Publikace (Czechoslovakia) 1955, no. 4/8, p. 111-121.

DESCRIPTORS: Petroleum, Sources, *Hydrology, Water, *Polarographic analysis, *Iodides, *Bromides, *Sulfides, Chemical analysis, *Geochemistry.

This treatise describes polarographic methods to determine iodides, bromides and sulphides of oil-well waters, serving partly as a base for it, adjusted generally used polarographic methods, and partly, using new analytic procedures. Iodides and bromides are determined after oxygenation to iodites and bromites, and sulphides by using their polarographic wave. These methods use no preliminary chemical dissociation, they are specific and they permit to determine all the mentioned elements so exactly as to 0.1 mg/l a preparatory concentration being unnecessary. (Author)

Knyazev, V. S.
SOME DATA ON THE CHARACTER OF THE FRAGMENTAL QUARTZ IN THE ROCK OF PRODUCTIVE LAYER OF THE AZERBAIDZHAN SSR AND A NUMBER OF OTHER DEPOSITS (Nekotorye Dannye o Kharaktere Oblomochnogo Kvartsa v Porodakh Produktivnoi Tolshchi Azerbaidzhanskoi SSR i Ryada Drugikh Otlozhenii). [1962] [10]p. (foreign text included).
Order from OTS or SLA $1.10 62-16435

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya, 1951, v. 16, no. 4, p. 102-105.

DESCRIPTORS: *Rock (Geology), Minerals, *Quartz, Geology, Deposits, Sedimentary rock, Rock.

On the basis of the study of quartz from rocks of productive layers in Azerbaidzhan it is concluded that the ratio of their types in various sedimentary rocks is inconstant; four different associations of types of quartz in the studied rocks are mentioned.

Levchenko, V.
SCIENTIFIC AND TECHNICAL CONFERENCE ON UNDERSEA GEOPHYSICAL EXPLORATION. 9 July 62, 2p. AID rept. 62-99. AD-285 928
Order from OTS or SLA $1.10 62-32101

Abstract trans. of Sovetskaya Geologiya (USSR) 1962, no. 5, p. 165-171.

DESCRIPTORS: Conferences, *Underwater, Ocean bottom, *Geophysical explorations, Geology, Seismic waves, Sedimentation.

Nejgebauer, V., Pavicevic, N. and others.
COMMENTARY ON THE SOIL MAP OF VOJVODINA SCALE 1:100,000 (Komentar Pedoloske Karte AP Vojvodine Razmere 1:100.000) tr. by Bozidar Filipovic. 1962, 42p. 37 refs. PL-480 Agr.
Order from OTS $0.50 61-11206

Trans. of mono. Zavod za Poljoprivredna Istrazivanja, Novi Sad, 1958, p. 1-48.

DESCRIPTORS: *Soils, Soil mechanics, *Maps, Climatology, Yugoslavia, *Economic geology, Petrology, Sand, Clay

Comments are given on the characteristic great soil groups on the Map, where the description of the main representative types of the particular groups is enlarged by the mention of the subsidiary types within them. (Author)

Neugebauer, V.
SOIL MAP OF VOJVODINA WITH A SHORT KEY TO IT [AND] SOIL FORMING FACTORS IN VOJVODINA (Pedoloska Karta Vojvodine sa Kratkim Komentarom [and] Cinioci Stvaranja Zemljista u Vojvodini) tr. by Danica Arandjelovic and Ugo Zunjevic. 1962, 85p. 54 refs. PL-480 Agr.
Order from OTS $1.00 60-21615

Trans. of mono. Metodika za Izradu Poljoprivrednih Osnova, Novi Sad, 1953, p. 1-22 and [Matica Srpska, Novi Sad. Zbornik za Prirodne Nauke] (Yugoslavia) 1952, no. 2, p. 63-130.

DESCRIPTORS: *Soils, *Maps, *Soil mechanics, Climatology, Yugoslavia

Orlov, Yu. A., ed.
FUNDAMENTALS OF PALEONTOLOGY, A MANUAL FOR PALEONTOLOGISTS OF THE USSR. GENERAL PART: PROTOZOA. 1962, 728p. refs. PL-480 Smi.
Order from OTS $7.50 61-11419

Trans. of mono. Osnovy Paleontologii, Moscow, 1959, 482p.

DESCRIPTORS: *Paleoecology, History, Genetics, Theory, Ecology, *Adaptation (Physiology), *Geology, Zoology, *Classifications, Animals, *Foraminifera, *Protozoa, Morphology, *Radiolaria, Geological time.

Shreiner, L. A. and Pavlova, N. N.
MECHANISM OF PULVERIZATION OF HARD ROCKS AND NEW TYPES OF CUTTING BITS. [1962] [12]p. 6 refs.
Order from OTS or SLA $1.60 62-16670

Trans. of Neftyanoe Khozyaistvo (USSR) 1954, v. 32, no. 4, p. 9-15.

DESCRIPTORS: *Rock, Fracture (Mechanics), Mechanical properties, Geology, Fatigue (Mechanics), *Drills, *Cutting tools.

Smirnova, N. V.
TYPES OF CEMENT IN SAND STONES AND SILT STONES. 13 Nov 61, 24p. 24 refs.
Available on loan from SLA 63-10224

Trans. of Akademiya Nauk SSSR. Institut Geologii i Razrabotki Goryuchikh Iskopaemykh. Trudy, 1960, v. 1 p. 247-259.

DESCRIPTROS: Rock (Geology), *Sandstone, Porosity, Permeability, *Cements, Minerals, Bonding, Hydraulic reservoirs, Petroleum, Gases, *Silt.

Strakhov, N. M.
ON GRANULOMETRIC METHOD USED IN TESTING OF SANDS ACCORDING TO PROFESSOR L. B. RUCHIN (O Granulometricheskom Metode Izucheniya Peskov Prof. L. B. Rukhina). [1962] [23]p..
Order from OTS or SLA $2.60 62-16675

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya, 1948 [v. 13] no. 3, p. 150-158.

DESCRIPTORS: *Sand, Test methods, *Geology.

Strakhov, N. M.
PRINCIPLES OF HISTORICAL GEOLOGY, PT. I, tr. by J. Kolodny. 1962, 257p. PL-480 Int.
Order from OTS $2.75 61-31211

Trans. of mono. Osnovy Istoricheskoi Geologii, pt. 1, Moscow/Leningrad, 1948.

DESCRIPTORS: *Geology, History, Geologic age determination, Geological time, Marine geology, Sedimentation, Earth, Lithosphere, Paleoecology, Sedimentary rock, Rock (Geology)

Contents:
Problems of historical geology
Methods of relative and absolute geochronology
Principles of facies analysis of marine deposits
Principles of facies analysis of continental sediments
Types of crustal movements, their features and genetic relationships
The main structural units of the earth's crust and trends and stages of its tectonic evolution
The earliest (pre-Cambrian) history of the earth's crust
The history of the crust during the Cambrian period
The history of the crust during the Silurian period
General features of the history of the Caledonian tectonic phase.

Volobuev, V. I.
ON THE IMPREGNATED-STREAKED SEMIMETALLIC MINERALIZATION IN THE GRANITES OF THE CHU-ILIISKIE MOUNTAINS. 3 Jan 62 [11]p. 5 refs.
JPRS: 16955.
Order from OTS or SLA $1.10 63-13676

Trans. of Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Izvestiya. Seriya Geologicheskaya, 1962, no. 2(47) p. 24-31.

DESCRIPTORS: *Geological survey, Mountains, *Stratigraphy, *Petrology, Rock, *Granite, *Minerals, *Ores, Lead, Zinc, Copper, Cobalt, Silver, Deposits.

The ore manifestations are characterized by impregnated-streaked types of semimetallic mineralization, by rather slight alterations of ore-bearing rocks, and by an extensive adaptation of ore-bearing rocks, and by an extensive adaptation to the small-fissure zones in the ore blocks of light granular adamellites, which are impacted in endo-contact zones in the concluding stages of the varietyped granite massif formation. In the region of the Aksuyek sector, in the adamellite ore blocks, are found rare cassiterite impregnations, and in the Karpykbay sector are located quartz veins and light deposits of greisens, in addition to the minerals molybdenite, tungsten, and tin; in both instances, the areas of rare-metallic manifestations and semimetallic mineralization slope extensively downward, which permits us to speak of the para-genetic relationship between impregnated-streaked semi-metallic mineralization and supplementary instrusions of granite massifs. It follows that for southern Kazakhstan and, apparently, for central Kazakhstan there is ascertained a new genetic type of hydro-thermal impregnated-streaked semi-metallic mineralization in the granites. A significant areal size of mineralized zones, an increased composition of lead, zinc, copper as well as cobalt, silver and other elements and related items witness the fact that in Kazakhstan there is quite possibly open industrial deposits of this type.

Oceanography

Nelepo, B. A.
DÉTERMINATION DES COEFFICIENTS DE DIFFUSION TURBULENTE DANS LA MER, À L'AIDE DE TRACEURS RADIOACTIFS [Determining the Coefficient of Turbulent Diffusion in the Ocean With the Help of Radioactive Indicators] tr. by Tarassenko. 10 Jan 62 [16]p. CEA Trans. no. R 1469 (text in French).
Order from OTS or SLA $1.60 62-25092

Trans. in French of Moscow U. Vest[nik]. Seriya 3: Fiz[ika] Astr[onomiya] (USSR) 1960 [v. 15] no. 4, p. 64-70.

DESCRIPTORS: Ocean, *Ocean waves, *Turbulence, Diffusion, Determination, Differential equations, Tracer studies.

Shuleikin, V. V.
TELLURIC CURRENTS IN THE OCEAN MAGNETIC DECLINATION. [1960] 6p. 7 refs. MDF S-178.
Order from OTS $0.50 62-11474

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 119, no. 2, p. 257-260.
Also available from CB $5.00

DESCRIPTORS: *Terrestrial magnetism, Magnetic fields, *Oceanographic equipment, Recording devices.

Physics of the Atmosphere

Kalinovskii, Aleksandr Boleslovich and Pinus, Naum Zinovevich.
SOVIET AEROLOGICAL MEASUREMENT. 17 Dec 62 [289]p. 99 refs. JPRS: 16691.
Order from OTS or SLA $18.00 63-13493

Trans. of mono. Aerologiya, chast' I: Metody Aerologicheskikh Izmerenii (Aerology, pt. I: Methods of Aerological Measurement) Leningrad, 1961, chaps. 6-9, p. 302-505 and 508-512.

DESCRIPTORS: *Atmosphere, *Meteorology, *Meteorological instruments, Meteorological radar, Radar, Clouds, Atmospheric precipitation, *Atmospheric motion, Meteorological balloons, Vertical-gust recorders, Anemometers, *Upper atmosphere, Atmospheric sounding, *Sounding rockets, Rockets, Measurement, Instrumentation.

Contents:
Use of radar for aerological research
Aerological methods of studying clouds
Methods for investigating vertical motion and turbulence in the free atmosphere
The use of rockets for atmospheric research
Bibliography.

Kondrat'ev, K. Ya. and Filipovich, O. P.
THE THERMAL STATE OF UPPER ATMOSPHERIC LAYERS. Oct 62, 405p. 472 refs. NASA Technical Trans. F-103. NASA N62-17998
Order from OTS $6.00 63-11518

Trans. of mono. Teplovoi Rezhim Verkhnikh Sloev Atmosfery, Leningrad, 1960, 356p.

DESCRIPTORS: *Upper atmosphere, Gases, Statistical analysis, Theory, *Thermodynamics, *Atmospheric sounding, Acoustic sounding, Meteors, Optics, Searchlights, Spectroscopy, Aurorae, Ozone, *Radiosondes, Atmospheric tides, *Rocket research, *Satellite vehicle research, Periodic variations, Stratosphere, Ultraviolet radiation, Electric currents, Magnetohydrodynamics.

problems having to do with the thermal state of upper atmospheric layers. It contains numerous facts as well as a consideration of the fundamental theoretical concepts involved in the explanation of the laws governing the thermal state. In addition, there is a comprehensive treatment of modern data concerning the composition and structure of the upper layers of the atmosphere.

Mirtov, B. A.
ROCKETS, SPUTNIKS, AND THE EXPLORATION OF THE UPPER ATMOSPHERE, tr. by E. R. Hope. Feb 62, 10p. DSIS T 366 R.
Order from NRCC

Trans. of Priroda (USSR) 1961 [v. 50] no. 10, p. 23-31. Other translations available elsewhere.

DESCRIPTORS: *Upper atmosphere, Atmosphere, Ionosphere, Exploration, Stratification, Gases, Ions, Density, Temperature, Meteorities, Interstellar matter, Atmospheric sounding, Sounding rockets, Rocket research, Satellite vehicle research.

Rudakov, V. A.
SOME RESULTS OF ROCKET MEASUREMENTS OF ELECTRON CONCENTRATIONS IN THE IONOSPHERE UP TO 200 KM (1959-60) tr. by V. W. Kuvshinoff. 16 Mar 62 [5]p. 3 refs. APL/JHU TG 230-T279.
Order from OTS or SLA $1.10 62-24051

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 10, p. 102-103.
Another trans. is available from STS $2.90 as STS-R6221, 1961, 2p.

DESCRIPTORS: *Ionosphere, *Electrons, Density, Determination, *Rocket research, Satellite vehicle research.

Zubyan, G. D.
A SYNOPTIC-AEROLOGICAL INVESTIGATION OF THE UPPER TROPOSPHERE AND LOWER STRATOSPHERE, tr. by Robert Sholiton. Mar 62 [93]p. 31 refs. AmMetSoc T-R-389 ; AD-283 539.
Order from OTS or SLA $8.60 62-32932

Trans. of mono. Sinoptiko-Aerologicheskoe Issledovanie Verkhnei Troposfery i Nizhnei Stratosfery, Moscow, 1961, 72p.

DESCRIPTORS: *Stratosphere, *Upper atmosphere, Meteorology, Temperature, Atmosphere, Height finding, Boundary layer, *Periodic variations, Meteorological charts, Meteorological data, *Cyclones, *Anticyclones, Air mass analysis, Planetary atmospheres.

Contents:
Characteristic features of temperature distribution in the upper troposphere and lower stratosphere and the height of the tropopause with respect to planetary upper-air frontal zones
Sharp temperature variations in the upper troposphere and lower stratosphere: fluctuations of the tropopause
The spatial frontal structure of cyclones and anticyclones.

ENGINEERING

Chernyshev, V.
LIGHT BEAMS SERVE HUMANITY. 18 June 62, 2p.
AID rept. 62-82.
Order from OTS or SLA $1.10 62-32117

Abstract trans. from Sovetskii Patriot (USSR) 1962, 6 June, p. 3.

DESCRIPTORS: *Lasers, Illumination, Space flight, *Underwater communication systems, Generators, *Satellite vehicles.

Kushlevich, B. R.
MANIPULATOR FOR TURNING SPHERICAL CONTAINERS, tr. by J. B. 24 Aug 62, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-32924

Trans. from Byulleten Izobretenii (USSR) 1960, no. 13 (Russian author's certificate 129,765, cl. 21h, 30/17 and 49h, 34/01, appl. 27 Apr 59, pub. 1 July 60).

DESCRIPTORS: *Containers, Spheres, *Welding, Remot control systems, *Hydraulic jacks.

A manipulator is proposed for turning (rotating) spheric containers during welding, containing a roller turning device arranged on hydraulic jacks. The manipulator is characterized in that, in order to simplify the manufacturing process of containers, the turning device with jacks is arranged on a frame turnable in horizontal plane and located inside a fixed circular support serving as a rest for the workpiece during the turning of the frame of the turning device. In order to secure uniform pressure of separate rollers of the turning device upon the workpiece, the rollers are arranged on separate hydraulic jacks whose cylinders are in communication.

Perazio, Eugène-Marc.
MANUFACTURE AND ASSEMBLY SYSTEM OF DOVETAILED ELEMENTS FOR WALLS AND PARTITION-WALLS EMPLOYED IN THE CONSTRUCTION OF STORIED BUILDINGS AND IN THE CONSTRUCTION OF PROVISIONAL DISMOUNTABLE BUILDINGS, tr. by J. B. 11 Sep 62, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-33244

Trans. of French patent 924,327, gr. 7, cl. 3, appl. 22 Mar 46, granted 3 Mar 47, pub. 1 Aug 47.

DESCRIPTORS: *Prefabricated buildings, Construction, Structures, Housing, Reinforced concrete, Insulating materials, Thermal insulation, Construction materials industry, *Walls.

Vodyanoi, A.
THE AN-24 AIR EXPRESS. 8 Aug 62 [12]p. (fig. omitted) FTD-TT-62-1056; AD-284 091.
Order from OTS or SLA $1.60 62-32946

Unedited rough draft trans. of Grazhdanskaya Aviatsiya (USSR) 1962 [v. 19] no. 3, p. 18-20.

DESCRIPTORS: Airplanes, *Transport planes, Specifications, Airframes, Fuselages, Aircraft cabins, Wings, Tails, Landing gear, Control systems, Hydraulic systems, Turbopropeller jet engines, Pressurized cabins, De-icing systems, Electrical equipment

Chemical Engineering

CHEMISTRY AND TECHNOLOGY OF COMBUSTIBLE SHALES AND THEIR PRODUCTS (Khimiya i Tekhnologiya Goryuchikh Slantsev i Produktov Ikh Pererabotki) tr. by I. Geller. 1962, 284p. 330 refs. PL-480 Int.
Order from OTS $3.00 61-11434

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut po Pererabotke Slantsev. Trudy (USSR) 1958, v. 6 [335p.].
##A partial trans. (p. 120-130) is available from ATS $11.75 as ATS-54L30R [1959] 5p.

DESCRIPTORS: *Shales, Chemistry, Processing, Chemical properties, Gases, Production, Ovens, *Tar, Pyrolysis, Sulfur compounds, *Phenols, Hydrogenation, *Alcohols, Gasoline, Napthalines, Hardness, Titration, Oxidation, Reaction kinetics, *Fuels, Bibliography, Conferences.

Contents:
Processing of shale in the USSR, by A. Sinel'nikov
Composition, properties, and utilization of shale tar, by N. I. Zelenin
Problems of efficient operation of shale-gas producers, by M. M. Barshchevskii and others
Cold-model study of fuel descent and gas flow in shale-gas producers, by A. S. Sinel'nikov and others
Gas-producer processing of shales of narrow grain-size range, by E. S. Bezmozgin and A. S. Sinel'nikov
A study of the operation of chamber ovens with top removal of the steam-gas mixture, by N. D. Serebryannikov
Material-balance tests on the chamber-oven unit of the shale-gas plant of the town of Slantsy, by A. S. Sinel'nikov and others
Experiments on shale-tar pyrolysis in chamber ovens, by E. S. Bezmozgin and others
Composition of shale gas, by A. E. Drabkin and others
##Organic sulfur compounds in shale gas, by A. E. Drabkin

The utilization of shale phenols, by N. I. Zelenin and E. E. Feofilov
Primary thermal conversion of the main components of medium shale-tar fractions, by N. I. Zelenin and K. B. Chernysheva
Liquid-phase hydrogenation of tar residues obtained by processing Baltic shales, by E. V. Glushenkova
Hydrogenation of neutral oxygenated fractions of shale tar, by E. E. Feofilov and G. N. Garnovskaya
Preparation of alcohols by hydration of alkenes of shale-tar gasoline fractions, by B. E. Gurevich and S. S. Semenov
The formation of phenols during liquid-phase hydrogenation of acid and neutral components, by E. V. Glushenkova and S. S. Semenov
The problem of determining small concentrations of naphthalene in gases, by N. N. Zhukova
Investigations on hardness of shale layers of the Kiviyli mine by the method of mutual grinding, by S. L. Epshtein and S. I. Rubailova
The determination of the acid number of shale tar by potentiometric titration, by G. N. Skrynnikova and others
The oxidation of high-molecular compounds, by V. F. Polozov and V. V. Fedotova
The Mechanism and kinetics of thermal decomposition of Baltic shales, by A. K. Mityurev
Fundamentals of the theory of thermal decomposition of solid fuel, by A. K. Mityurev
Annotated bibliography on problems of processing combustible shales, by E. G. Askinazi
Special enlarged session of the scientific council of VNIIPS, devoted to problems of shale-gas producers.

IMPROVED CONTINUOUS SINGLE-STAGE PROCESS FOR ALKYLATION OF AROMATIC HYDROCARBONS WITH OLEFINS AND FRIEDEL-CRAFTS CATALYSTS. [1962] 8p. 1 ref.
Order from RIS $15.00 RIS Rept. 9710

Trans. of German patent application no. B 44 384 (12 o, 1/01) DAS 1 060 371, by Badische Anilin u Soda Fabrik, A. G., filed 20 Apr 57, pub. 2 July 59.

DESCRIPTORS: Hydrocarbons, *Benzenes, *Alkenes, *Friedel-crafts reactions, Catalysts, Aluminum compounds, Chlorides, *Alkylation.

POLYMERIZATION OF ETHYLENE IN NONIONIC EMULSIONS. [1962] 17p.
Order from OTS or SLA $1.60 62-18660

Trans. of Belgian patent for importation 611,101 by Spencer Chemical International, Inc., Panama, filed 4 Dec 61, granted 4 June 62 (based on Spanish patent 269,341, granted 8 Sep 61).

DESCRIPTORS: *Ethylenes, *Polymerization, Colloids, Manufacturing methods, Emulsions.

PROCESS FOR STABILIZING CHLORINATED HYDROCARBONS, tr. by J. B. 21 Sep 62, 5p.
Order from OTS or SLA $1.10 62-33243

Trans. of French patent 732,569, gr. 14, cl. 1, by Société dite Roessler and Hasslacher Chemical Co., U. S. A., appl. 2 Mar 32, granted 20 June 32, pub. 22 Sep 32 (3 pat. appls. filed U. S. A. 3 Mar 31 per statement of applicant).

DESCRIPTORS: *Hydrocarbons, *Chlorine compounds, Chlorides, Methanes, Ethylenes, Ethanes, Stabilization.

PROCESS OF PREPARING TRIMETHYLOL PROPANE, tr. by F. H. B. 17 Sep 62, 6p.
Order from OTS or SLA $1.10 62-33246

Trans. of French patent 1,081,691, gr. 14, cl. 1, by Chemische Werke Albert, Germany, appl. 28 July 53, granted 9 June 54, pub. 22 Dec 54 (priority claimed based on appl. in Germany 18 Nov 52 in name of applicant).

DESCRIPTORS: *Propanes, Methyl radicals, Preparation, Formic acids, Separation.

A process is proposed for preparing trimethylol propane in which after the customary condensation reaction of butyl aldehyde and formaldehyde in an ordinary condensation alkaline medium, the reaction product is dissolved by means of a trimethylol propane solvent in which the salts to be separated are insoluble or substantially insoluble, the mixture is dehydrated and the formiates thus separated are removed by centrifugation or filtration; then the filtrate is mixed, after the solvent has finally been removed by distillation, with small quantities of inorganic acid-reaction substances, and finally a distillation is carried out.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 39. 6 Dec 62 [41]p. JPRS:16552.
Order from OTS or SLA $3.60 63-13515

Trans. of Narodnoe Khozyaistvo Uzbekistana (USSR) 1962 [v. 4] no. 8, p. 36-38; and 8 selected articles from Aug-Sep 62 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Fertilizers, Production, Industrial plants, *Industrial plants, Construction, Mining engineering, Metallurgy, Carbon black, *Petroleum industry, Construction materials industry, *Tires, *Chemical waste.

Contents:
Certain problems of the production of mineral fertilizers, by S. Aronov and Yu. Yashin
Construction of the Soligorsk chemical combine, by A. Zenchenko
Construction of the Rachi mining-metallurgical combine in Uravi, Georgian SSR, by S. Kiladze
Construction standstill at the Cheleken carbon black plant, by N. Danilov
Lagging construction at the Sumgait petro-chemical combine, by R. Agasiev and others
Construction of the Razdan building material combine, by M. Savel'ev
Lagging production of liquid nitrogen fertilizers and

feed
Longer service life of tires, by A. Suslyakov
Valuable products from chemical wastes, by V. Lebedev and others.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 40. 7 Dec 62 [47]p. JPRS: 16556.
Order from OTS or SLA $4.60 63-13524

Trans. of Mashinostroitel' (USSR) 1962, no. 9, p. 39-41; and of 12 selected articles from Aug-Oct 62 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, Chemical engineering, Chemistry, Tires, Cellulose acetates, Synthetic rubber, Fertilizers, Corrosion inhibition, Plastics, Polymers, Machines, Heat-resistant plastics, Synthetic fibers, Paints, Varnishes, Bleaching agents, Toilet articles, Packaging, Paint primers, Specialization.

Contents:
Planning tire production at Krasnoyarsk tire plant, by V. Brun'ko and others
Shortcomings in the construction of the acetylcellulose complex at the "Polivinlatsetat" plant, by A. Shkulev
Soft rubber from the Sumgait synthetic rubber plant, by P. Sysoev
Inefficient operation at the Rustavi nitrogen fertilizer plant, by Beridze
Use of plastics against corrosion, by A. I. Zhidashkin
New polymers and their use in machine buildings, by V. Ukhinov
Patterns from current-conducting plastics, by A. A. Shturman and others
New developments in Soviet tire industry, by P. Badenkov
Inefficiency at the no. 3 chemical plant of the Leningradskii sovnarkhoz, by F. Dmitriev
Corrective measures at the no. 3 chemical plant of the Leningradskii sovnarkhoz
Development of household chemical products, by E. Brantman
Exhibit of household products in Vil'na, by V. Naumenko
Ways to improve the operation of lacquer and paint plants in the Baltic republics, by V. Yanbykh.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 42. 27 Dec 62 [32]p. JPRS: 16862.
Order from OTS or SLA $3.60 63-13650

Trans. of Promyshlennoe Stroitel'stvo (USSR) 1962 [v. 40] no. 10, p. 11-14; Nauchno-Tekhnicheskie Obshchestva SSSR, 1962 [v. 4] no. 10, p. 36-39; and from Rabochaya Gazeta (USSR) 1962, 20 Oct; Pravda Ukrainy (USSR) 1962, 4 Oct; Sovetskaya Rossiya (USSR) 1962, 5 Oct; Pravda, Leningrad (USSR) 1962, 5 Oct.

DESCRIPTORS: *Industrial production, *Chemical industry, Industrial plants, Construction, Operation, Fertilizers, Nitrogen, Phosphates, *Tires, *Vulcanization, Mining engineering.

Contents:
Reconstruction of the Dzhambul superphosphate plant, by V. P. Kalyapin
Inefficient operation of the Rustavi nitrogen fertilizer plant, by A. Drabkin
Tires with removable treads, by D. Savich and V. Kalechits
Development of an automatic vulcanizer at the "Bol'shevik" tire plant in Kiev, by E. Desyatnik
Miscalculations in planning of production, by V. Kalachinskii
Lagging construction of the "Fosforit" mine, by A. Vikhrev.

Beder, N. M. and Pakshver, A. B.
A STUDY OF THE PROPERTIES OF POLYACRYLONITRILE SOLUTIONS, tr. by I. Gawronska. 3 Jan 62 [10]p. 9 refs. Courtaulds Misc. Lit. 3423; NLL M.3570.
Order from OTS or SLA $1.10 62-24690

Trans. of Khim[icheskie] Volok[na] (USSR) 1961, no. 3, p. 21-24.

DESCRIPTORS: Solutions, *Acrylonitriles, Polymers, Manufacturing methods.

Calvet, E.
ADAPTATION OF A FOUR-ELEMENT MICROCALORIMETER TO THERMOGRAVIMETRIC STUDIES OF ADSORPTION, tr. by Bertha P. Klenova. 1 July 53, 3p. TVA 3209.
Order from OTS or SLA $1.10 62-32254

Trans. of [Academie de Sciences, Paris]. Compt[es] Rend[us] (France) 1953, v. 236, p. 486-488 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Calorimeters, Heat exchangers, *Adsorption, Gravimetric analysis, Thermodynamics.

Coutelle, Max.
DEVICE FOR ELECTROPLATING MASS-PRODUCED ARTICLES, tr. by P. C. C. 6 Aug 62, 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-32913

Trans. of German patent 277,128, cl. 48a, gr. 12, pat. from 1 Sep 12, pub. 29 July 14.

DESCRIPTORS: *Electroplating, Anodes (Electrolytic cell), Containers.

Grubitsch, Heribert.
PROCESS AND DEVICE FOR THE STORING OF CHLORINE DIOXIDE. [1962] 3p.
Order from OTS or SLA $1.10 62-18316

Trans. of Austrian patent 1 100 001 [1925].

DESCRIPTORS: *Chlorine compounds, *Dioxides, Storage, Gas cylinders, *Pressure vessels.

The process is characterized by using liquid carbon dioxide as solvent and by adjusting the chlorine dioxide content at normal temperature to a maximal 25 weight percent.

Grubitsch, Heribert.
PROCESS FOR THE PREPARATION OF PURE CHLORINE DIOXIDE. [1962] 3p.
Order from OTS or SLA $1.10 62-18317

Trans. of Austrian patent 1 100 002 [1925].

DESCRIPTORS: *Chlorine compounds, *Dioxides, Preparation, Carbon dioxide.

The process for the preparation of stabilized, pure chlorine dioxide is characterized by mixing purified, bromine-free chlorine dioxide with carbon dioxide, condensing by the action of cold and then boiling off the carbon dioxide at temperatures between 0 to 50° C., preferably 20 to 30° C.

Helme, J. P., Molines, J. and others.
CONTRIBUTION TO THE THEORETICAL STUDY OF THE PHENOMENON OF DRYING POWER. [1962] 32p. (18 figs. [refs.] omitted).
Order from SLA $3.60 62-10707

Trans. of Peintures, Pigments, Vernis (France) 1960, v. 36, no. 10, p. 574-587.

DESCRIPTORS: *Dehydration, Theory, Hydroperoxides, Decomposition, Oxidation, Polymers, Separation, Polymerization, *Oils, Free radicals.

This theoretical study permits the authors to give evidence of three very distinct stages in the phenomenon of autoxidation; the formation of a hydroperoxide, the decomposition of the hydroperoxide with the formation of secondary oxidation products and, finally, the decomposition of the latter into scission products and polymers. These polymers are more difficult to isolate and characterize and are the object of numerous hypotheses. The considered structures are differentiated by the manner in which the inter-chain linkage is effected; either by a carbon-carbon linkage or by a linkage of the oxygen-bridge type. (Author)

Miyanishi, Michika.
ON THE NATURE OF THE SURFACE OF GLASS AND FUSED SILICA AS VIEWED FROM THE ANGLE OF CATALYTIC ACTION IN THE OXIDATION OF GASOLINE AT LOW TEMPERATURE. [1962] [14]p. (foreign text included) 7 refs.
Order from SLA $1.60 62-18129

Trans. of [Hiroshima Daigaku Kogakubu Kenkyu Hokoku (Japan) 1955, v. 4, no. 1] p. 111-115.

DESCRIPTORS: Temperature, *Gasoline, *Oxidation, Catalysis, Catalysts, Dioxides, Silicon compounds, *Fused materials, *Glass, Surface properties.

It was found by use that the formation of formaldehyde in the mixture of n-hydrocarbons and oxygen, which was heated at temperature of about 250°C, was given due to the wall reaction. The reaction was surely given when the microcrystal form of wall substances was hexagonal one, while it was not when the form was cubic or tetragonal one. For the combustion of gasoline a similar relation was observed. On the other hand formaldehyde was not given in the case of n-hydrocarbons (C_nH_{2n+2}) with n values less than 5. From these facts and the difference of octane numbers of various n-hydrocarbons, it was considered that $(Si_2O_3)^3$ forms a hexagonal crystal on the surface of glass or fused silica. (Author)

Prohazka, Jiri.
SELECTIVE ISOLATION OF STYRENE FROM UNREFINED BENZOL FRACTIONS. [1962]6p.
Order from OTS or SLA $1.10 62-33230

Trans. of Czech patent 89,975, 15 May 59.

DESCRIPTORS: *Styrenes, Separation, Selection, *Benzenes, Fractionation.

A method was found for selective isolation of styrene from unrefined benzol fractions boiling at 135-175°C. These fractions are treated with mercury acetate in methanol and resulting β-phenol-β-methoxy-mercuriethanol acetate is decomposed with sodium chloride to the corresponding chloride. The chloride is steam distilled from acidified mixture to give a monomeric stvrene. (Author)

Stricker, F.
ION EXCHANGE RESINS FOR THE TREATMENT OF HIGH SULPHURIC ACID PICKLING SOLUTIONS. Dec 62
Order from BISI 3 10s BISI-3045

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 21] p. 1445-1449.

DESCRIPTORS: Solutions, *Pickling, *Sulfuric acid, *Ion exchange resins.

Tsukhanova, O. A. and Shapatina, E. A.
HEAT EXCHANGE IN GRANULATED MATERIAL HEATED WITH A STREAM OF HOT GAS. [1962] 3p.
Order from OTS or SLA $1.10 62-16796

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1943, no. 7, p. 62-72. A complete trans. is available from OTS or SLA $1.10 as 61-16944 [1961] 10p. and from LC or SLA mi$2.70, ph$4.80 as 60-23027, Oct 59 [22]p.

DESCRIPTORS: *Fluidized solids, *Heat transfer, Mathematical analysis, Gases.

For abstract see Technical Translations 6: 418, 1961.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 9 (ELECTRONICS, ENGINEERING AND SPACE RESEARCH SERIES).
15 Nov 62 [37]p. JPRS: 16199.
Order from OTS or SLA $3.60 63-13103

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, Hungary, and Rumania.

DESCRIPTORS: *Abstracts, Literature, *Czechoslovakia, *Hungary, *Rumania, *Electronics, *Engineering, Space communication systems, Automation, Voltage, *Communication equipment, *Geophysics, Geodesics, *Weather forecasting, Communication systems.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 12 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES).
28 Nov 62 [22]p. JPRS: 16393.
Order from OTS or SLA $2.60 63-13321

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, Hungary, and Poland.

DESCRIPTORS: *Abstracts, Literature, *Czechoslovakia *Hungary, *Poland, *Electronics, *Engineering, Meteorology, Linear systems, Radio reception, Bandpass filters, Analog systems, Frequency analyzers, Adaptive control systems, Electrical networks, Acoustic impedance, Electrical impedance, Printed circuits, Radio receivers, Engineering personnel, Reliability, Life expectancy, Television transmitters, Detectors, Communication systems, Pneumatic devices, Control, Valves, Beams, Deflection, *Elasticity, Stresses, Metal plates, Water waves, Aquatic animals, Ice, Motion, Ocean currents, Electronic equipment.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 18 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES).
6 Dec 62 [21]p. JPRS: 16549.
Order from OTS or SLA $1.60 63-13516

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, East Germany, and Hungary.

DESCRIPTORS: *Abstracts, Literature, *Czechoslovaki *East Germany, *Hungary, *Electronics, *Engineering, Industrial equipment, Television equipment, Signal generators, Radio stations, Diodes, Electrical equipment, Soldering, Telephone lines, Training devices, Economics, Correlation techniques, Transportation, Scheduling, Control systems, Transformers, Wave transmission, Discharge tubes, Electronic equipment, Resistors, Thermistors, Printed circuits, Capacitors, Coils, *Meteorology, Weather forecasting.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 30 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES).
26 Dec 62 [35]p. JPRS: 16835.
Order from OTS or SLA $3.60 63-13638

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia, East Germany, and Poland.

DESCRIPTORS: *Abstracts, Literature, *Czechoslovakia, *East Germany, *Poland, *Electronics, *Engineering, *Communication theory, Automation, Computer logic, Medical equipment, Welding, Piston rings, Gas flow, Servomechanisms, Reading machines, Transistors, Language, Cathodes, Oscillators, Data storage systems, Linear programming, Semiconductors, Sound, Magnetostrictive elements, Alloys, Operational calculus, Electromagnetic properties, Operators (Mathematics), Transformers, Magnetic materials, Electron tubes, Electric insulation, Halocarbon plastics, Video signals, Antennas, Primary cells, Quartz resonators, Electronic, equipment.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 35 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES).
31 Dec 62 [8]p. JPRS: 16920.
Order from OTS or SLA $1.10 63-13669

Consists of abstracts of articles from the East European scientific and technical journals of East Germany.

DESCRIPTORS: *Abstracts, Literature, *East Germany, *Electronics, *Engineering, Linear programming, Transportation, Scheduling, Rolling mills, Operation, Feedback, Control, Circuits, Thermometers, Cold cathode tubes, Discharge tubes, Automation, Control systems, Electronic equipment.

CONDENSER CONSISTING OF A PLURALITY OF THIN METAL-COATINGS WITH INSULATING LAYERS THEREBETWEEN. 12 Nov 46, 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-18467

Trans. of German patent 582,670, cl. 21 g, gr. 1002, issued 19 Aug 33, pat. from 14 Oct 27, by Radio Patents Corp., New York (Priority: U.S.A., 13 Jan 27).

DESCRIPTORS: *Capacitors, Metal coatings, Insulating materials, Electric insulation, Thin films (Storage devices).

CONSTANT POTENTIAL DIODE CONSTRUCTION. Jan 63.
Order from WBI $2.00

Trans. of main claims, including drawings, of utility model publication no. 37-32105, 8 Dec 62, by Kokusai Denki K. K.

DESCRIPTORS: *Diodes, Construction, Electric potential.

DEVICE FOR IDENTIFICATION OF RADIO TUBES OR OTHER DISCHARGE TUBES WITH RESPECT TO THEIR GENUINENESS AND PRIOR USE. [1962] 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-18452

Trans. of German patent 670,106, 11 Jan 39, cl. 21 g, gr. 13_{50} R 96 329 VIII c/21g, granted 15 Dec 38 [to] Radio Corp. of America, U.S.A.

DESCRIPTORS: *Discharge tubes, *Electron tubes, Identification, *Labels.

DEVICE FOR MEASURING THE REVERSE PRESSURE LIMIT OF SEMICONDUCTOR JUNCTIONS. Nov 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of utility model publication no. 37-31217, 24 Nov 62, by Nippon Electric Co., Ltd.

DESCRIPTORS: *Junction boxes, *Semiconductors, Pressure, Measurement, Electrical equipment.

STABILIZED TRANSISTOR DEVICE USING A NEUTRALIZING ELEMENT CONSISTING OF p-n JUNCTION DIODE AND EQUIVALENT SERIES RESISTORS. Nov 62
Order from WBI $2.00

Trans. of main claims, including drawings, of utility model publication no. 37-31218, 24 Nov 62, by Matsushita Electric Industrial Co., Ltd.

DESCRIPTORS: *Transistors, Resistors, *Diodes, Electric connectors, Junction boxes, Stability, Neutralization, Electronic equipment.

TECHNICAL AND OPERATIONAL ASPECTS OF INTERVISION (Technische und Betriebliche Belange der Intervision). [1962] [9]p. (figs. omitted). H-8299; JPRS (R-1463-D).
Order from OTS or SLA $1.10 62-25206

Trans. of Radio und Fernsehen (German Democratic Republic) 1960, v. 9, no. 21, p. 665-666.

DESCRIPTORS: *Video networks, *Television stations, *Television receivers, Television transmitters, Video signals, Radio signals, Electric switches, Control.

A discussion of regulations covering the technical phases of Intervision, a Soviet bloc international television program exchange system.

TECHNICAL COMMUNICATIONS MAGAZINE, 1956 [VOL. 9, NO. 1: SELECTED ARTICLES] tr. by Frederick C. Woodland Jr. [1962] [51]p. (illus. omitted) 15 refs. H-3365 A-D.
Order from OTS or SLA $5.60 62-25236

Trans. of [NTZ] Nachrichtentechnische Zeitschrift (West Germany) 1956 [v. 9, no. 1] p. 1-18, 21-28, 34-39, 47.

DESCRIPTORS: *Communication systems, *Antenna radiation patterns, Fourier analysis, Multiplex transmission, *Radiofrequency cables, *Radio transmission, *Radio signals, Detection, Noise, Statistical analysis, Counting methods, *Electronic scanners, *Radio astronomy.

Contents:
Favorable current and field distribution with plane and longside radiating sources with a continuous engagement, by A. Heilmann
Carrier frequency installation for cable overhead line and radio transmission, by Heinz Hannemann and Heinz Piechatzek
The frequency band writer, by Horst Fleischer and Horst Widdra
New equipment for the determination of the statistical distribution of irregular electrical processes, by J. Grosskopf and others.
Radio telescope in the Eifel. [Ref. last page]

TRANSISTOR AMPLIFIER-CONVERTER FOR PROVIDING A CARRIER OUTPUT ACCORDING TO INFINITESIMAL D.C. COMPONENT. Nov 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of utility model publication no. 37-29674, 5 Nov 62, by Asahi Denki K. K.

DESCRIPTORS: *Transistor amplifiers, Direct current, Rectifiers, Frequency-shift converters, *Transistors, *Amplifiers, *Electronic equipment, *Subminiature equipment.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 30. 5 Dec 62 [18]p. JPRS: 16529.
Order from OTS or SLA $1.60 63-13497

Trans. of 13 selected articles from Aug 62 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Electrical equipment, Electric machinery, Petroleum, Transmission lines, *Electrical engineering, Hydroelectric power systems, Generators, *Electrical industry, *Electricity, Rural areas, Supplies, Scheduling, Transformers, Steel, Metal plates, Thermoelectric generators.

Contents:
Additional electrical equipment for cotton ginning in Uzbekistan
Electric petroleum well drilling rigs from Kutaisi
High-voltage testing of power transmission equipment
Komsomol members speed up delivery of hydroelectic power generation
Electric clothes drier for homes
Electrical equipment for metallurgical, chemical and petroleum industries
Transformer sub-stations for agriculture, by M. Lidina
Production of Moscow Izolyator Plant for hydroelectric power stations and transmission lines
Automation at dinamo plant delayed by inefficient supply procedure, by A. Kaliko and others
New 200-KW generator produced by Armenian electric machine building plant
Erevan electrical apparatus plant diversifies and improves production, by A. Musael'yan
Steel plate urgently needed by Elektrosila plant for completing generator on schedule, by A. Shevkin
Production of turbogenerators at Elektrosila Plant.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 31. 20 Dec 62 [36]p. 4 refs.
JPRS: 16771.
Order from OTS or SLA $3.60 63-13486

Trans. of Promyshlennaya Energetika (USSR) 1962 [v. 17] no. 10, p. 52-53; Kommunist Estonii (USSR) 1962 [v. 18] no. 7, p. 13; Vestnik Elektropromyshlennosti (USSR) 1962 [v. 33] no. 9, p. 3-7; no. 11, p. 1-4; Tekhnika v Sel'skom Khozyaistve (USSR) 1962 [v. 22] no. 9, p. 52; and selected articles from July-Oct 62 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Electrical engineering, Electrical industry, Hoists, *Electric machinery, Railroad cars, Generators, Machine tools, Automation, Transformers, Rural areas, Electric cables, Electric insulation, Electric potential, Electric switches, Voltage regulators, Cooling and ventilating equipment, Electric welding, Engine starters.

Contents:
Crane and metallurgical engines of the MT-MTK 000-700 series
New electric trains
The birth of a plant, by A. Yakhlakov
The automation of rural electric grids, by N. M. Zul'
Industrial developments at Stavropol, by N. Nerubenko
New insulator plant under construction at Perm
Help wanted
New type TDUG-250,000/330 transformer
Expensive and troublesome, by B. Pesochenko
High voltage, by V. Zvereva
A unique switch
Improving the quality of transformers, by L. Stel'makov
Problems in the cooling of electrical machinery, by M. I. Zemlyanoi and V. V. Mal'tsev
High-frequency welding equipment for sale
Magnetic starters for sale.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 49. 20 Dec 62 [21]p.
JPRS: 16797.
Order from OTS or SLA $1.60 63-13459

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 8, p. 53-54; and 13 selected articles from Aug-Oct 62 issues of 10 Russian newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, Metals, Detection, Radioactive isotopes, Radio receivers, Electric motors, Miniature electrical equipment, Weighing, Balances, Professional personnel, Telephone communication systems, Instrument dials, Industrial plants, Electrical industry, Automation, Electrical engineering, Measuring devices (Electrical and electronic), Mirrors, Cutting tools, Batteries and components, Transformers, Commerce.

Contents:
Using isotopes to detect metals
The new ausma radio receiver, by N. Kartseva
Problems of producing miniature electric motors, by O. Turovets
New dial-type weighing scales
Help wanted ad by a design bureau of instrument making
An unusual dial telephone
The Cheboksary electrical apparatus plant
News from electrical-engineering and radio plants, by O. Gusev
The M1604 and M127 meggers for measuring insulation resistance of electric circuits, by S. M. Sokolovskii
Production of miniature mirrors
Battery radios advertised by central Moscow mail-order store
Developing a new autotransformer
Exports of tea-processing equipment to Vietnam.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 51. 31 Dec 62 [53]p.
JPRS: 16923.
Order from OTS or SLA $5.60 63-13659

Trans. of 13 selected articles from various Soviet sources.

DESCRIPTORS: *Industrial production, *Precision equipment, *Machines, Electrical engineering, Electrical industry, Agricultural machinery, Lubrication, Quality control, Training, Coupling circuits, *Electrical equipment, Crystals, Vibrators (Electrical), Cold cathode tubes, Railroads, Relays, Control systems, Automatic Instrumentation, Sound reproduction systems, Industrial equipment, Material control.

Contents:
New precision equipment
Good leadership at the "El'fa" plant in Lithunia
Unifying lubrication system devices, by K. Pokkins
Work improves at the Riga "Avtoelektropribor" plant, by E. Erglis
New trade school course at Erevan
Prohibition of the use of PU-86 type coupling devices
Cannibalization of finished products
A device for cutting crystals, by V. S. Shadrin
Cold-cathode gas-filled electronic tubes, by A. Presnyakov

Meeting of workers of the electric engineering plants of the ministry of railways
New relays, excutive mechanisms and meters
The "Latviya" radio-phonograph, by F. Tormozov
Cannibalization practices at various plants, by A. Roslov.

WOUND CONDENSER PRODUCED FROM METALLIZEI STRIPS OF INSULATING MATERIAL FORMING THE DIELECTRIC. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18469

Trans. of German patent 712,648, 23 Oct 41, cl. 21g, gr. 1002, granted 25 Sep 41, pat. [from] 28 Oct 34, addition to patent 709,264 (main patent began 9 June 3.

DESCRIPTORS: *Capacitors, Insulating materials, *Electric insulation, Dielectrics.

Agadzhanyan, N. and Akulinichev, I.
COSMIC BIOTELEMETRY. 10 Dec 62 [12]p.
JPRS: 16600. NASA N63-10980.
Order from OTS or SLA $1.60 63-13505

Trans. of Tekhnika Molodezhi (USSR) 1962 [v. 30] no. 9, p. 25-26.

DESCRIPTORS: *Space medicine, Spacecraft, *Space communication systems, *Telemeter systems.

A summary of medical telemetry experience gained from the Soviet manned space flights.

Baltrushevich, A. V.
THE EFFECT OF LEVEL QUANTIZATION UPON THE DYNAMIC PROCESSES IN DIGITAL AUTOMATIC SYSTEMS WITH CONTINUOUS SIGNAL TRANSMIS-SION. 3 July 62 [13]p. 7 refs. FTD-TT-62-891; AD-283 877.
Order from OTS or SLA $1.60 62-32538

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 4, p. 191-196.

DESCRIPTORS: Automatic, *Digital systems, Dynamics, Signals, Transmission, *Analog-to-digital converters, *Servo systems.

Bessonov, A. A.
AN ELECTRONIC DEVICE FOR DIFFERENTIATING THE ENVELOPE OF AN ALTERNATING-CURRENT VOLTAGE. 28 Feb 62 [5]p. FTD-TT-61-174.
Order from OTS or SLA $1.10 62-23661

Unedited rough draft trans. of Russian patent 134039, 19 July 57.

DESCRIPTORS: Alternating current, Voltage, *Differentiating circuits, Circuits, Electronic equipment, Feedback, Reliability.

The electronic device for differentiating the envelope of an alternating current voltage is distinguished by the fact that, in order to simplify the device and increase its reliability, it contains passive differentiating circuits, each of which is connected in series with an amplifier element and provides negative or positive feedback, making it possible to realize a transfer function of the type where ω_0 is the resonance frequency; a is the coefficient; and p is the root of the characteristic equation of the system, obtained by direct simulation of dc circuits.

Damaskina, I. I. and Chetverikova, G. A.
THERMIONIC ENERGY CONVERTERS. 28 Aug 62 [11]p 15 refs. FTD-TT-62-666. AD 286 572
Order from OTS or SLA $1.60 62-33532

Unedited rough draft trans. of Teploenergetika (USSR) 1962 [v. 9] no. 3, p. 82-86.

DESCRIPTORS: *Thermionic converters, *Thermionic emission, Energy, Diodes, Cathodes, Anodes, Space charges, Electrons, Vapor pressure, Operation.

Dasoyan, M. A.
SMALL HERMETICALLY-SEALED NICKEL-CADMIUM STORAGE BATTERIES. 29 May 62 [13]p. 2 refs. FTD-TT-61-271.
Order from OTS or SLA $1.60 62-25828

Unedited rough draft trans. of Vestnik Elektropromyshlennosti (USSR) 1960 [v. 31] no. 2, p. 46-49.

DESCRIPTORS: *Alkaline cells, *Storage batteries, Electrostatic capacitance, Gases, Combustion, Chemical reactions, Electrochemistry, Electrical equipment, *Seals, *Cadmium compounds, *Nickel.

Eichenauer, Fritz.
WIRE GUIDE WITH SPRING AND CORD AS CONDUCTOR FOR ELECTRIC TOOLS OPERATED IN A PENDULUM MOTION. 27 Dec 52, 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18479

Trans. of German patent 481,795, 29 Aug 29, cl. 21c, gr. 7, E 33853 VIIIb/21c, granted 15 Aug 29, pat. from 17 Mar 26.

DESCRIPTORS: *Electric wire, *Helical springs, Guidance, Electrical equipment, Motion.

Fal'kovich, S. E.
RECEPTION OF RADAR SIGNALS AGAINST A BACKGROUND OF FLUCTUATING INTERFERENCES, tr. B. M. K. 10 Oct 62, 210p. (refs. omitted). I-1431.
Order from OTS $3.50 63-11517

Trans. of mono. Priem Radiolokatsionnykh Signalov na Fone Flyuktuatsionnyikh Pomekh, Moscow, 1961 [310p.].

DESCRIPTORS: *Radar signals, *Radar receivers, Radio reception, *Radar interference, Probability, Correlation techniques, Signal-to-noise ratio, Radar equipment, Design.

The book is devoted to a statistical determination of the limiting (potential) possibilities of radar systems with various types of signals and to theoretical questions of designing radar receivers. Analyzed are the basic factors which determine the power of the threshold signals and the maximum accuracy of reading target coordi nates on the receiver against a background of stationary, gaussian interferences. Included in the work is original material and material which is a statement and a genera conclusion of known results.

Gössinger, Jobst and Koschel, Heinz.
APPARATUS FOR DETERMINING THE TRANSMISSION FACTOR OF SOUND RECORDING DEVICES, tr. by J. B. 18 Sep 62, 8p. (fig. omitted).
Order from OTS or SLA $1.10 62-33237

Trans. of German patent 813,169, cl. 21a^2, gr. 18/50, by Siemens & Halske A. G., pat. from 2 Oct 48, grant announced 12 July 51, pub. 10 Sep 51.

DESCRIPTORS: *Sound reproduction systems, *Sound transmission, Acoustics, Pressure, Automatic volume control, Radiofrequency.

An apparatus is claimed for determining the transmissic factor of sound recording devices by means of sound pressure produced and defined by volume change in a pressure chamber and acting directly upon the sound recording device. The apparatus is characterized in tha the drive of the structural part changing the volume of tl pressure chamber takes place in such a manner that the velocity amplitude (maximum value of velocity) of said part remains the same at all frequencies.

Hanff, F. and others.
ALUMINUM AS SHEATHING MATERIAL FOR CABLES. 14 Mar 53, 14p. (figs. tables omitted).
Order from SLA $1.60 62-18370

Trans. of Siemens Zeitschrift (Germany) 1939, v. 19, [no. 8] p. 357-368.

DESCRIPTORS: *Aluminum, *Electric cables, *Electric insulation, Corrosion, Oxidation, Films, Metallurgy.

Hanisch, Hans-Joachim.
CHARACTERISTICS OF THE OC 822 AND OC 823 TRANSISTORS (OC 822, OC 823 Germanium-pnp Flachen transistor). [1962] [5]p. (figs. omitted). H-8297; JPRS (R-1467-D).
Order from OTS or SLA $1.10 62-25207

Trans. of Radio und Fernsehen (German Democratic Republic) 1960, v. 9, no. 16, p. 513-514.

DESCRIPTORS: *Transistors, Switching circuits, Electronic switches, Germanium.

Summaries of construction details, characteristic data under static and dynamic conditions, and limiting values for a 30v. and a 60v. transistor for use in switching applications.

Hennyey, Z.
LINEAR ELECTRIC CIRCUITS, tr. by N. Izsak. 1962, 330p.
Order from Addison-Wesley Pub. Co., Inc., Reading, Mass.

Trans. of unidentified Hungarian mono., n.p. [1960].

DESCRIPTORS: *Electrical networks, Circuits, Linear systems, Theory, Analysis, Synthesis, Filters (Electromagnetic wave), Electric filters, Low-pass filters, Band-pass filters, Topology, Operational calculus.

Holle, Werner and Warning, Paul-Friedrich.
DIRECTIONAL MICROPHONE, tr. by P. C. C. 20 Apr 62, 6p. (2 figs. omitted) 3 refs.
Order from OTS or SLA $1.10 62-24517

Trans. of German Auslegeschrift (DAS) 1,014,595, cl. 21a^2 14/01, internat. cl. HO4m, by Laboratorium Wennebostel, Dr. -Ing. Sennheiser, appl. 15 Feb 55, appl. announced and Auslegeschrift pub. 29 Aug 57.

DESCRIPTORS: *Microphones, *Electroacoustic transducers, Transducers, Waveguides, Design

Ignatenko, V. P. and Myasnikov, A. S.
COMPENSATION OF ION SPACE CHARGE BY ELECTRONS. 9 May 62 [16]p. 4 refs. FTD-TT-62-317.
Order from OTS or SLA $1.60 62-25737

Unedited rough draft trans. of #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 12, p. 2084-2092.

DESCRIPTORS: Ions, *Ion beams, *Space charges, *Electrons, Electron beams, Absorption, Ionic current, Propagation, Drift, Statistical functions.

The propagation of a one-dimensional ion stream whose space charge is compensated by electrons at a certain cross section of the stream is examined. (Author)

Ivakhenko, A. G.
APPLICATION OF THE THEORY OF COMBINED CONTROL SYSTEMS TO ADAPTIVE CYBERNETIC SYSTEMS. 23 Sep 62 [26]p. 14 refs. FTD-TT-62-977.
Order from OTS or SLA $1.60 63-13385

Unedited rough draft trans. of mono. Trudy [Pervogo] Mezhdunarodnogo Kongressa Mezhdunarodnoi Federatsii po Avtomaticheskomu Upravleniyu [International Congress of the International Federation on Automatic Control (no.1)] Moscow, 1961, p. 709-725.
A trans. of the complete mono. is available from OTS or SLA $15.50, JPRS-16043, 6 Nov 62 [241]p.

DESCRIPTORS: *Control systems, Theory, Adaptive control systems, Stability, Cybernetics, Servomechanisms, Errors, Tuned circuits, Circuits.

The report discusses recent developments of invariance theory and also shows that this theory is applicable not only to ordinary systems with constant characteristics, but also to cybernetic systems. (Author)

Izrailev, R. A. and Nikiforov, E. P.
SIGNALLING THE ONSET OF ICING ON OVERHEAD TRANSMISSION LINE CONDUCTORS. [1962] [6]p. 1 ref C. E. Trans. 2469; [DSIR] NLL M. 8826.
Order from OTS or SLA $1.10 62-32815

Trans. of Energetik (USSR) 1961, v. 9, no. 9, p. 6-9.

DESCRIPTORS: *Transmission lines, *Conductors, Ice, Remote control systems, *Ice formation indicators, Electrical equipment.

Kalabekov, B. A. and Levin, G. A.
OPTIMUM PRESELECTION FOR MULTICHANNEL FREQUENCY-MULTIPLEXED AND FREQUENCY-MODULATED RELAY SYSTEMS. 28 June 61 [17]p. 4 refs. USASIA Trans. Log no. 1186.
Order from OTS or SLA $1.60 62-32658

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 1, p. 45-55.

DESCRIPTORS: *Radio relay systems, *Multiplex transmission, *Frequency modulation, Wave transmission, Theory, Radio signals, Noise (Radio), *Radio-frequency filters, Circuits, Tables, *Multichannel communication systems.

A theory of preselection in multichannel frequency-multiplexed and frequency-modulated radio relay systems is given. A method is devised for finding near-to-optimum preselection characteristics. Reference tables are given to simplify the work of finding the necessary form of preselection characteristics. (Author)

Katkov, Kromin.
RADAR INTERFERENCE AND PROTECTION AGAINST IT. 17 Dec 62 [39]p. JPRS: 16690.
Order from OTS or SLA $3.60 63-13539

Trans. of mono. Osnovy Radiolokatsionnoi Tekhniki (Radar Technique Fundamentals) n.p., n.d., p. 430-467.

DESCRIPTORS: *Radar interference, *Radar antijamming, Interference analyzers, Radiofrequency filters, Pulse discriminators, Pulse height analyzers, Amplifiers, *Moving-target indicators, Circuits.

Contents;
General Information
The effect of interference on radar stations: Active interference; pulse interference; unmodulated disturbance; modulated disturbance; passive disturbances; reflections from local objects.

Protection from interference: RF filters; intermittent selection; amplitude selection; differentiating loop; instantaneous automatic gain regulation; automatic regulation of detector cutoff; automatic regulation of receiver amplifier on a time gain;
Moving target selection: Principle of moving target selection; block diagram for a device with MTS with compensation; elements of the fundamental circuit of MTS device.

Kegel, K.
HIGH FREQUENCY HEATING, ITS PRINCIPLES AND APPLICATIONS. 12 July 49, 14p. (figs. omitted).
Order from SLA $1.60 62-18409

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[ei]ts[chrift] (West Germany) 1949, v. 91, no. 2, p. 25-32.

DESCRIPTORS: *Heaters, High frequency, Electrical equipment, *Induction heating, *Dielectrics, Heat transfer, Thermal conductivity, Generators, Driers (Apparatus) Melting.

Kovalev, P. F. and Kocherga, N. G.
THE DEPENDENCE OF THE IGNITION CURRENT ON THE INDUCTANCE OF THE CIRCUIT, DETERMINED BY A STATISTICAL METHOD (Zavisimosti Toka Vosplameniya ot Induktivnosti Tsepi, Opredelennye Statisticheskim Metodom) tr. by L. Meyer. [1962] [8]p. 6 refs. S. M. R. E. Trans. no. 4431, [DSIR] NLL M. 3050.
Order from OTS or SLA $1.10 62-25579

Trans. of [Nauchno-Issledovatel'skii Institut po Bezopasnosti Rabot v Gornoi Promyshlennosti. Trudy] 1956 [v. 6] no. 2, p. 22-26.

DESCRIPTORS: *Electrical equipment, Circuits, Electric currents, *Inductance, Statistical analysis, *Explosive gases, Methane, Hydrogen, Air, Explosions, Ignition.

The fundamental aim of the present work is to determine the experimental dependence of the ignition current on the inductance and voltage of electrical circuits at points of equal probability of ignition and to use this for the selection of parameters for intrinsic safety, and also for the testing of electrical systems. (Author)

Markman, F.
METHODS OF RATING THE TRANSMISSION CHARACTERISTICS OF TELEPHONE APPARATUS. [1962] 16p. (figs. tables omitted) 10 refs.
Order from SLA $1.60 62-18494

Trans. of Teknisk Tidskrift (Sweden) 1943 [v. 73] 6 Feb, p. E20-E28.

DESCRIPTORS: Telephone equipment, *Telephone transmitters, Standards, Tests.

Mikaelyan, A. L. and Stolyarov, A. K.
DESIGN OF RESONANCE FERRITE TUBES. 15 Aug 61 [18]p. 1 ref. USASIA Trans. Log no. 1200.
Order from OTS or SLA $1.60 62-32651

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 9, p. 42-51.

DESCRIPTORS: *Waveguides, Design, *Ferrites, Resonance, Weight, Temperature, Power, Magnetic fields, *Standing wave ratio.

Questions concerning the design of resonance tubes for different wave length ranges are considered, as well as

the means of obtaining temperature-stable characteristics and methods of reducing the weight and dimensions of tubes. Designs of tubes intended for different applications are described. (Author)

Nagorskii, V. D.
CONTROL BY DIRECT CURRENT MOTORS USING RAISED FREQUENCY PULSES. [1960] 9p. 2 refs.
MDF N-109
Order from OTS $0.50 62-11389

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: E[nergetika] i A[vtomatika] 1960, no. 2, p. 38-43.

DESCRIPTORS: *Electric motors, Direct current, Control systems, Speed regulators, *Semiconductors, Triodes, Electromagnetic pulses.

Nesteruk, V. F., Porfir'eva, N. N., and Finagin, B. A.
THE PRINCIPLES OF CONSTRUCTION OF DEVICES FOR THE GENERATION OF ELECTRICAL SIGNALS OF RANDOM CONFIGURATION, USING RADIOACTIVE DECAY AS THE MASTER PROCESS. 9 Aug 62 [12]p. 5 refs. FTD-TT-62-1033; AD-284 109.
Order from OTS or SLA $1.60 62-33062

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1961, v. 4, no. 3, p. 135-140.

DESCRIPTORS: Communication equipment, *Signal generators, Pulse generators, *Radioactive decay, Energy conversion, Statistical functions.

The article deals with the principles of construction of generators of random signals, GTS in particular, using radioactive decay as the master physical process. The first part of the article gives the basic characteristics of radioactive decay, characteristics that are essential for the generation of random signals. The second part is devoted to a consideration of a block diagram of a GTS generator and the requirements which must be met by each of its elements. (Author)

Putz, W.
HEATING OF WORKPIECES TO 50 - 100°C BY EDDY CURRENTS. [1962] 5p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-18244

Trans. of Werkstatt und Betrieb (West Germany) 1949 [v, 82, no. 9] p. 316-317.

DESCRIPTORS: *Electric currents, *Induction heating, Power, Conductors, Electric cables, Alternating current, Armature coils, Electric machinery, Wire-winding machines.

Raupach, Friedrich.
CURRENT TRANSFORMER WITH A PREMAGNETIZATION WINDING, tr. by J. R-P. 30 Apr 62, 6p. (3 figs. omitted).
Order from OTS or SLA $1.10 62-24516

Trans. of German patent 878,530 (addition to 750,915) cl. 21e, gr. 27/01, by Koch & Sterzel A. G., pat. from 29 Oct 41, grant announced 16 Apr 53, pub. 5 June 53 (principal patent from 27 Oct 40).

DESCRIPTORS: *Transformers, Design, *Coils, Paramagnetism, Nickel alloys, Iron alloys.

Reche, K.
ADVANCES IN TELETYPE COMMUNICATION. [1962] 13p. (figs. refs. omitted).
Order from SLA $1.60 62-18246

Trans. of ETZ [Elektrotechnische Zeitschrift. Ausgabe A. Zentralblatt fΓr Elektrotechnik] (West Germany) 1953, v. 74 [no. 1] p. 4-10.

DESCRIPTORS: *Teletype systems, *Communication systems, *Telegraph systems, Transmission lines, Electronics.

Schmidt, Karl,
ELECTRICAL CONDENSER PRODUCED BY THE FOLDING OF SUPERIMPOSED STRIPS OF COATING AND DIELECTRIC LAYERS. 26 Feb 47, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18470

Trans. of German patent 712,901, cl. 21g, gr. 1002, granted 2 Oct 41, issued 28 Oct 41, pat. [from] 18 Aug 39.

DESCRIPTORS: *Capacitors, Coatings, *Dielectrics, Production.

Sominskii, M. S.
SOLAR ELECTRIC POWER STATIONS. 14 Dec 62 [20]p. JPRS: 16683.
Order from OTS or SLA $1.60 63-13545

Trans. of Priroda (USSR) 1962 [v. 51] no. 9, p. 77-86.

DESCRIPTORS: *Electric power production, *Solar radiation, *Solar cells, *Photoelectric cells (Semiconductor), Silicon, Energy, Batteries and Components.

Topic headings are: (1) regeneration of solar heat engineering, (2) rectifying photoelectric cells, (3) the silicon photocell, (4) energy losses in a photocell, (5) difficulties in the path of the development of photoelectric helioengineering, (6) where the solar photobatteries work, and (7) ways of perfecting photoelectric conversion.

Streng, Klaus K.
VHF AND UHF ANTENNA FEEDS (Antennenergieleitungen fΓr VHF und UHF). [1962] [10]p. (figs. omitted) 5 refs. H-8987; JPRS (R-1588-D).
Order from OTS or SLA $1.10 62-25208

Trans. of Radio und Fernsehen (German Democratic Republic) 1960, v. 9, no. 17, p. 550-553.

DESCRIPTORS: *Antenna feeds, *Very high frequency, *Ultrahigh frequency, Transmission lines.

The contribution deals with lines between antennas and receivers in the range of meter and decimeter waves (VHF and UHF). In addition to a brief theoretical consideration of various problems of such lines, values of actually built lines and design parameters are given. (Author)

Suetin, T. A. and Revis, L. S.
IGNITRON JS 200/2 (Ignitron IS 200/2) [AND] ARC BACK INDICATORS FOR HIGH-VOLTAGE MERCURY-ARC RECTIFIERS (Ukazatel Obratnyk Zazhiganii dlya Vysokovol'tnykh Vypryamitelei) tr. by D. J. Satchell. [1960] [12]p. (3 illus. omitted). H-4796.
Order from OTS $0.50 61-11102

Trans. of Vestnik Elektropromyshlennosti (USSR) 1958 [v. 29] no. 8, p. 28-32.

DESCRIPTORS: *Rectifiers, *Mercury arc rectifiers, Half wave rectifiers, Indicator lights, Specifications, Circuits.

Vorob'ev, A. A., Vorob'ev, G. A. and others.
GENERATOR OF HIGH VOLTAGE PULSES OF NANOSECOND DURATION. 26 July 62 [8]p. (2 refs. omitted) 8 refs. FTD-TT-62-843; AD-283 909.
Order from OTS or SLA $1.10 62-32534

Unedited rough draft trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1962 [v. 7] no. 1, p. 96-98.

DESCRIPTORS: *Pulse generators, Generators, Design, Voltage, Electrostatic capacitance.

A short high voltage pulse generator is described which generates single pulses with an amplitude of 15 kv with front length of no less than 1 nanosec. and controllable duration in the interval of 10-40 nanosec. The generator consists of forming cable, commutating polyelectrode discharger, transmission lines and devices for correcting the pulse front and for reducing its duration.

The correction system includes a correcting capacitance and peaking discharger. The generator is simple in construction and in adjustment as compared with the already known ones. (Author)

Wisch, W.
MEASURING INSTRUMENTS FOR CHECKING HIGH-OHMIC AND SEMICONDUCTOR COMPONENTS. 29 July 60 [18]p. (figs. omitted) 5 refs. USASIA: SC-125/60B; JPRS: R-847-D.
Order from OTS or SLA $1.60 60-31314

Trans. of Nachrichtentechnik (German Democratic Republic) 1959 [v. 9] no. 12, p. 546-549.

DESCRIPTORS: *Measuring devices (Electrical and electronic) *Ohmmeters, Design, Theory, Construction, Electric bridges, Galvanometers, Recording devices, *Semiconductors.

The design of two testers which were first developed for the investigation of CdS-semiconductor cells but can also be used, for example, for checking high-ohmic circuit elements is discussed. The first apparatus checks the ohmic behavior of components with a working voltage in the range from 10 mv to 100 v. The indicating instrument reads full scale for a ± 30% resistance variation of the component under test and is independent of the applied working voltage. The second instrument records simultaneously the current from six components whose resistance may lie in the range from 10 to 10^6 MΩ. The working voltage may be from 1 v to 250 v. This instrument was first conceived for the investigation of resistance variation in semiconductors under the effect of hard γ -radiation. On the basis of the measuring principles employed, the instruments may be easily constructed for other desired ranges of measurement. (Author)

Zakharov, N. N. and Bel'kind, V. T.
AN INDIRECT-ACTION PNEUMO-MECHANICAL SYSTEM FOR CONTROLLING THE NUMBER OF REVOLUTIONS (WITH A STATIC IRREGULARITY) OF GAS TRUBINE ENGINES USED FOR DRIVING ELECTRIC GENERATORS. 22 May 62 [5]p. FTD-TT-61-367.
Order from OTS or SLA $1.10 62-25726

Unedited rough draft trans. of Soviet patent 134499 (703034/25) 7 July 59.

DESCRIPTORS: *Gas turbines, Rotation, Control, *Pneumatic systems, Amplifiers, *Generators, Operation.

In order to increase its sensitivity for a broad range of changes in air temperature, air from behind the compressor is used to the working substance. In order to simplify its operation and increase the reliability the speed-overnor signal amplifier and the pick-up regulators are combined into one unit.

Mechanical Engineering

Alekseev, V. and Yakobson, V.
LEVEL CONTROL RELAY DU-4 WITH VARIABLE INDUCTOR. 6 Aug 62 [11]p. 6 refs. FTD-TT-62-524.
Order from OTS or SLA $1.60 62-32935

Unedited rough draft trans. of Kholodil'naya Tekhnika (USSR) 1959 [v. 36] no. 4, p. 29-33.

DESCRIPTORS: *Refrigeration systems, Refrigerants, *Liquid level control, Liquid level gages, *Remote control systems, *Electric relays, *Magnetic core switches, Coils, Design.

VNIKhI has constructed a level control relay DU-4 with a variable inductor. With rise in level of the refrigerant a steel tube welded to the float passes into the solenoid increasing its inductivity. The current thereby falls from 0.2 - 0.25 to 0.03 - 0.05 a. One or more electromagnetic relays of the ET-523 type are connected in the coil circuit, actuating signal lamps, bell, solenoid valve and/or compressor starter. Diagrams are produced of the signalization, safety cut-out and control circuits of the device and examples are given for its adjustment. Its advantages over the previous design of the float relay DU-3 with mercury switches is its greater reliability, the use of two small section instead of four large section leads, simplicity and universality of the circuit, capability of functioning at low temperatures and under vibration. (Author)

Fries, Jan R. de.
THE CAPILLARY BLOWER: A BLOWER WITH LAMINARY AIR FLOW AND INTERESTING CHARACTERISTICS. [1962] 13p. (10 figs. omitted).
Order from SLA $1.60 62-10388

Trans. of reprint from Technica (Switzerland) 1961 [v. 10] p. 682-687.

DESCRIPTORS: *Air conditioning equipment, Ventillation, *Blowers, Noise, Aerodynamic characteristics, Gas flow, Laminar boundary layer, Capillary tubes.

A laminar blower was constructed and developed with the help of intensive theoretical and experimental examinations, and it was possible to obtain efficiencies and capacities within the range of the usual small blowers. These blowers are very quiet, and the character of their noise corresponds to that of a "white" noise similar to a rushing noise. The characteristics curve of this blower is extremely steep, and they react to choking or blocking with a strong increase in pressure. In many, even most, cases, they can be set up in such a way that variations in the input- or output resistance of the system ventilated are balanced out by small variations in volume. The blowers are already under mass production in sizes up to a capacity of 300 m^3/h. Legal rights have been applied for and recorded. These new capillary blowers are especially suitable for comfort ventilation for living quarters and for industrial applications in which noise and the characteristics curve are of importance. The fiber baskets may be exchanged or washed. The capillary blower housings are larger than the usual good radial blowers, but because of their cubical outer shape and the large degree of adaptability of the air passages they may be installed even in small rooms. (Author)

Jung, R.
DUST DISPERSION IN OPERATING WITH INJECTION MILLS. [1962] 7p. (figs. omitted).
Order from SLA $1.10 62-18391

Trans. of V[ereinigung] der G[rosskesselbesitzer]. Mitteilungen (West Germany) 1961, no. 72, p. 155-158.

DESCRIPTORS: *Coal, Particles, Combustion, Distribution, *Gas flow, *Furnaces, Injectors.

The possibilities of a uniform distribution of the dust-laden air streams going out from the mills to the individual burners are shown on some characteristic examples. The uniform distribution at the beginning of the combustion path which is striven for in this way is one of the basic prerequisites for a favorable course of combustion. Therefore the corresponding requirements for expedient mill arrangement and guidance of the channels and dust lines favorable to the flow should already be decisively considered in the planning. (Author)

Mut'ev, M. S.
CALCULATION OF THE AREA OF OVAL GROOVES. May 59 [3]p. 2 refs. BISI Trans. no. 1201; NLL M. 4326.
Order from OTS or SLA $1.10 62-24204

Trans. of Stal' (USSR) 1958 [v. 18] no. 9, p. 823-824.

DESCRIPTORS: *Boilers, Steam, Metal plates, Fracture (Mechanics), Stresses, Mathematical analysis.

Vvedenskii, T. A.
STANDARDIZATION IN MECHANICAL ENGINEERING, tr. by A. Solan. 1962, 56p. 7 refs. PL-480 Comm.
Order from OTS $0.50 61-31197

Trans. of mono. Standartizatsiya i Normalizatsiya v Mashinostroenii, Kiev/Moscow, 1957 [76p.].

DESCRIPTORS: *Mechanical engineering, Engineering, Standards, Machines, Construction.

The book contains basic reference data on machine-building standards, as well as brief practical instructions on the developing and drawing up of these. Basic information is given on departmental, branch and factory normalization*, on the organization of norm planning, on the selection of norm subjects, and on the drawing up of norms. The book is intended for designers and technicians of machine-building factories. (Author)

Ordnance, Missiles, and Satellite Vehicles

Rasch, Heinrich Gustav.
STEERABLE AERIAL TORPEDO WITH BUILT-IN GYROSCOPE. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18300

Trans. of German patent 305,620, 11 June 20, pat. from 9 July 1916.

DESCRIPTORS: *Gyroscopes, *Aircraft torpedoes, Control systems, *Guided bombs.

Sokolovskii, V. D., ed.
MILITARY STRATEGY. 20 Nov 62 [618]p. 124 refs. FTD-TT-62-1289; AD-287 839.
Order from OTS or SLA $26.00 63-15025

Trans. of mono. Voennaya Strategiya, Moscow, 1962, 458p.

DESCRIPTORS: *Political science, Communism, Economics, Military intelligence, Warfare, *Armed forces (Foreign), Leadership, *Armed forces operations, *Strategic materials, *War potential, Satellite vehicles, National defense, Civil defense systems, Foreign policy, Economic warfare, Nuclear weapons.

Contents:
General concepts
Military strategy of imperialist countries and their preparation of new wars
The development of Soviet military strategy (1917-1945)
The nature of modern war
Problems of the building of armed forces
Methods of conducting warfare
Preparing a country for the repulsion of aggression
Leadership of the armed forces

Vavilov, V. S., Malovetskaya, V. M. and others. SILICON-SOLAR BATTERIES AS SOURCES OF THE ELECTRIC POWER SUPPLY OF ARTIFICIAL EARTH SATELLITES. [1962] [13]p. 15 refs. [USASIA] Trans. Log no. 1009.
Order from OTS or SLA $1.60 62-32645

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1957, v. 63, no. 1, p. 123-129.
Other translations are available from LC or SLA mi$1.80, ph$1.80 as 59-16769 [1959] 9p.; mi$2.40, ph$3.30 as 59-12656, APL/JHU TG 230-T6, June 58, 13; mi$2.40, ph$3.30 as 59-10869 [1959] 15p.; and from OTS $6.50 as AEC-tr-3973, pt. I.

DESCRIPTORS: *Satellite vehicles, *Solar batteries, *Silicon, *Electrical power production, Semiconductors, Photoelectric cells, Electrical properties, Temperature.

For abstract see Technical Translations 2: 56, 1959.

Sanitation and Safety Engineering

CHEMICAL AND BIOLOGICAL WEAPONS AND POSSIBILITIES FOR DEFENSE AGAINST THEM. Subject no. 3 of Reference Material for Instructing the Population in Air Defense. 13 Nov 62 [18]p. JPRS: 16166.
Order from OTS or SLA $1.60 63-13069

Trans. of unidentified article pub. by the Ministry of Interior, Air Defense Command, East Berlin, 1959, p. 3-20.

DESCRIPTORS: *Chemical warfare agents, Countermeasures, *Biological warfare agents, Identification, *Civil defense systems, Training, Population

Purpose of this lecture is to be acquainted with the nature historical development, use and effects, characteristics and means of defense against chemical and biological weapons. (Author)

HYGIENE AND SANITATION, 1962 [VOL. 27] NO. 10: [SELECTED] ARTICLES. 19 Dec 62 [48]p. 28 refs. JPRS: 16754.
Order from OTS or SLA $4.60 63-13485

Trans. of Gigiena i Sanitariya (USSR) 1962 [v. 27] no. 10, p. 57-62, 73-74, 94-100, 122-124.

DESCRIPTORS: *Public health, *Sanitary engineering, Microorganisms, *Water, *Contamination, Detection, *Enterobacteriaceae, *Clostridium botulinum, Bacteria, Symposia.

Contents:
The use of culturing and coagulation for the detection of pathogenic microbes in water, by Milyaeva, E. N. and G. M. Fisher
The use of fluorescent antibodies for the accelerated detection of dysentery bacteria, by S. I. D'yakov and others
On cases of botulism due to home-made canned fruits and vegetables, by E. S. Krasnitskaya
Sanitary and bacteriological methods and the solution of practical sanitary problems, by L. I. Mats and A. N. Sysin
Chronicle and information.

U. S. S. R. LITERATURE ON WATER SUPPLY AND POLLUTION CONTROL, VOL. 3: A SURVEY, by B. S. Levine. 1962 [267]p. 322 refs.
Order from OTS $4.00 61-31601-3

Trans. of mono. Sanitary Water Basins Protection against Pollution with Industrial Sewage, bk. 4: Limits of Allowable Concentrations of Deleterious Substances in Water Basins, Moscow, 1960, ed. by S. N. Cherkinskii; and Gigiena i Sanitariya (USSR) 1960, v. 25, no. 10, p. 96-101; no. 11, p. 8-12; 1961, v. 26, no. 1, p. 107-109; no. 3, p. 15-21; 1962, v. 27, no. 1, p. 49-51, 82-83; Vodosnabzhenie i Sanitarnaya Tekhnika (USSR) 1950, no. 3, p. 10-13; Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1960, v. 15, no. 7, p. 15-21; 1961, v. 16, no. 10, p. 57-61; and one article from an unidentified source.

DESCRIPTORS: *Water supplies, Contamination, *Wastes (Industrial), *Toxicity, Cadmium, Selenium, Barium, Alcohols, Ketones, Cyclohexanones, Formaldehyde, Benzenes, Xylenes, Toluenes, Pyridines, Acrylonitriles, Lactams, Chloroprenes, Formamides, Phosphates, Quinones, Formates, Arsenic compounds, Zinc, Immunology, Fishes, Purification, *Germicides, Chlorine, Ultrasonic radiation, Ion exchange resins, Ozone, Brucella, Mycobacterium tuberculoses, *Chemical analysis, Radioactive isotopes, Iodine, Soils, Atmospheric pollution.

The major portion of the 40 papers translated in this collection deal with the results of systematic researches directed toward the determination of the allowable concentrations of the many deleterious substances commonly present in industrial wastes. Other papers are concerned with water sterialization and analytical procedures, and general discussions of the national status of soviet air, water, and soil sanitation.

Krotkov, Fedor Grigor'evich. SOVIET TEXTBOOK OF MILITARY HYGIENE. 2 Jan 62 [188]p. 27 refs. JPRS: 16929.
Order from OTS or SLA $13.50 63-13660

Trans. of mono. Uchebnik Voennoi Gigieny, Moscow, 1962, 188p.

DESCRIPTORS: Textbooks, *Military medicine, *Sanitary engineering, Military facilities, Military rations, Housing, Armed forces, Military operations, Clothing, Radar stations, Nutrition.

Contents:
Barracks hygiene
Encampment hygiene
Disposition of troops under field conditions
Hygiene of field defensive structures
Battlefield sanitation
Water supply in the field
Hygiene of nutrition
Hygiene on the march
Personal hygiene
Clothing hygiene
Hygienic problems of antiatomic protection
Hygiene of special types of troops
Aviation hygiene
Problems of hygiene at radar stations
Hygienic support of armored troops
Labor hygiene in the artillery

Paderno, I., Lipatov, A., and Gavril'chik, V.
INSTRUMENT FOR FIXATION OF FLAMES. 23 Apr 62 [8]p. FTD-TT-61-455.
Order from OTS or SLA $1.10 62-25846

Unedited rough draft trans. of Radio [Moscow] (USSR) 1961, no. 8, p. 27-28.

DESCRIPTORS: Flames, Detection, *Fire detectors, Flame propagation, Combustion, Detectors.

An electronic device is described which detects the flame of a burning match under any conditions (in the darkness of the night or in bright Sun-light).

Ship Building

Egorov, I. T.
NON-STATIONARY FORCES ACTING ON THE SUPPORTING HYDROFOILS OF HIGH-SPEED VESSELS IN A SWOLLEN SEA, tr. by E. R. Hope. Nov 62, 4p. 2 refs. DSIS T 376 R.
Order from NRCC NRCC C-4124

Trans. of Sudostroenie (USSR) 1962 [v. 28] no. 4, p. 13-14.

DESCRIPTORS: *Hydrofoil boats, *Ship structural components, *Hydrodynamic configurations, *Hydrofoils, *Ocean waves, Hydrodynamics.

Lyush, D. V. and Nikolaev, B. N.
DOSIMETRIC CONTROL ON ATOMIC SHIPS. 17 Dec 62 [134]p. 26 refs. JPRS: 16703.
Order from OTS or SLA $10.50 63-13551

Trans. of mono. Dozimetricheskii Kontrol'na Atomnykh Sudakh, Leningrad, 1962, 132p.

DESCRIPTORS: *Nuclear-powered vessels, Nuclear propulsion, *Marine nuclear propulsion, *Nuclear power plants, Safety, Shielding, *Dosimeters, Gases, Aerosols, Radioactivity, Control, Dose rate, Nuclear energy, Nuclear reactions, Nuclear reactors, Reactor kinetics, Radiation measurement systems components, Fission products, Disposal, *Icebreakers, Gamma rays, Neutrons, Penetration, Waste (Sanitary engineering), Ventilation, Clothing, Contamination, Cargo ships, Submarines.

The work deals with the problems of radiation safety and dosimetric control methods on vessels with nuclear power plants. It includes the necessary information from the fields of physics and nuclear technology. Also included is a brief description of the system of radiation safety and dosimetric control on the atomic icebreaker "Lenin", along with some information on radiation safety on foreign nuclear vessels. (Author)

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Ertanov, I. D., Boiko, N. N. and others.
PHYSIOLOGICAL AND HYGENIC EVALUATION OF RATION DEVELOPED BY TsNIIKOP (CENTRAL SCIENTIFIC RESEARCH INSTITUTE OF THE CANNING AND VEGETABLE INDUSTRY) FOR INDIVIDUAL USE [AND] THE PROBLEM OF THE FOOD VALUE OF UNICELLULAR ALGAE. 5 Dec 62 [19]p. 50 refs. JPRS: 16531.
Order from OTS or SLA $1.60 63-13495

Trans. of Voprosy Pitaniya (USSR) 1962, v. 21, no. 5, p. 71-81.

DESCRIPTORS: *Food, *Military rations, Nutrition, *Closed-cycle ecological systems, *Algae, *Life support, *Manned spacecraft, Space flight, Space medicine.

The paste ration contains an adequate quantity of proteins, fats, carbohydrates in acceptable proportions. Assimilation of the paste ration, on the average, is equal to 90.3 percent; this includes: 79.4 percent of the protein, 92.3 percent of the fat, 91.2 percent of the carbohydrate, 81.5 percent of the ash. After eating of the ration for eight days the nitrogen balance was positive. The ration is properly made up and satisfies the physiological needs of the organism for the basic nutrient substances. Taste for the ration is not lost: the subjects expressed the desire to eat it more than eight days. No disorders of gastro-intestinal activity were noted in this period. The ration affords the possibility of providing a normal diet under expeditionary conditions, etc., is convenient to transport and use (Yertanov) A survey is made of the literature dealing with the use of algae as food. (Boyko, et al)

Janicki, J. and Kukiel, E.
INFLUENCE OF THE RADIATIONAL METHOD OF STERILIZATION OF THE FOOD PRODUCTS UPON THE MICROORGANISMS AND THE ENZYMES, PT. 2 (Wplyw Radiacyjney Metody Sterylizacji Srodkow Spozywczych na Mikoro-Wrganizmy i Enzymy (II Czesc)) tr. by Claudius F. Mayer, June 59 [12]p. (5 figs. omitted) 40 refs. H 3766.
Order from OTS or SLA $1.60 59-21075

Trans. of Przemysl Spozywczy (Poland) 1958, v. 12, no. 9, p. 339-344.

DESCRIPTORS: *Food, *Preservation, *Radiation effects, Microorganisms, Enzymes, Nutrition, Ionization, *Decontamination.

Kanitz, Fritz.
DOUGH ROUNDER, tr. by J. R-P. 27 Aug 62, 9p. (figs. omitted).
Order from OTS or SLA $1.10 62-32926

Trans. of Austrian patent 136,544, cl. 2b, appl. filed 15 Feb 32, pat. term begins 15 Sep 33, pub 10 Feb 34.

DESCRIPTORS: *Bread, Processing,

Mazokhina, N. N.
THE CURRENT STATUS OF THE BOTULINUM PATHOGEN PROBLEM IN THE CANNING INDUSTRY. 31 Dec 62 [9]p. 6 refs. JPRS: 16913.
Order from OTS or SLA $1.10 63-13667

Trans. of Konservnaya i Ovoshchesushil'naya Promyshlennost' (USSR) 1962 [v. 17] no. 11, p. 36-39.

DESCRIPTORS: *Food, Preservation, *Botulism, Clostridium botulinum, Food poisoning, Inhibition.

A survey of recent researches directed toward methods of inhibiting the growth of Clostridium Botulinum in canned foods.

Mordkovich, M. S., Sirota, M. A. and others.
STERILIZING OPERATION CONDITIONS FOR CANNEI FOODS IN A CONTINUOUS HYDROSTATIC STERILIZER (Rezhimi Sterilizatsii Konservov v Nepreryvno Deistvuyushchem Gidrostaticheskom Sterilizatore) tr. by M. Slade [1962] [18]p. (foreign text included) [CSIRO] Trans. no. 5729.
Order from OTS or SLA $1.60 62-33100

Trans. of Konservanaya i Ovoshchesushil'naya Promyshlennost' (USSR) 1961, v. 16, no. 9, p. 13-19.

DESCRIPTORS: *Food, *Sterilizers, *Temperature, Preservation.

In 1959 the "First of May" Tiraspol'sk canning factory completed the installation of the "Hydron" sterilizer of the Mitchell Engineering Company, England. The use of the "Hydron" enables us to conduct the sterilization process continuously; it improves the working conditions of the operators; it increases the intensity of heat exchange; it permits us to load and unload the cans automatically and to regulate the sterilization conditions; the sterilizer has a high output and is economical.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

CENTRIFUGAL PUMP, tr by G. E. 13 Sep 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-33235

Trans. of German patent 258,364, cl. 59b, gr. 4, by Siemens-Schuckert Werke G. m. b. H., pat. from 4 Feb 12, pub. 2 Apr 13.

DESCRIPTORS: *Centrifugal pumps, Impellers, Helixes Water pump rotors.

In the impeller suction chamber, special helically-shaped rotating distributor blades are provided, driving the sucked-in fluid forward in counterflow direction, so that a uniform load is applied to the impeller blades. (Author)

MACHINE FOR THE PRODUCTION OF SHELLS AND ROLLERS FROM STRIP IRON. [1962] 6p. (figs. omitted).
Order from OTS or SLA $1.10 62-18473

Trans. of German patent 695,619, 29 Aug 40, cl. 7c, gr. 26, pub. 1 Aug 40, pat. from 12 Jan 34.

DESCRIPTORS: *Machines, *Iron, *Rolling mills, Processing.

METHOD OF MANUFACTURING PIPE BRACKETS AND MACHINE PROVIDED THEREFOR. [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-18486

Trans. of Swedish patent 79,261, Feb 32.

DESCRIPTORS: *Pipes, *Mounting brackets, Manufacturing methods, Machines.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CONSTRUCTION MACHINERY NO. 20. 19 Nov 62 [14]p. JPRS: 16255.
Order from OTS or SLA $1.60 63-13340

Partial trans. of ##Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1962 [v. 16] no. 7, p. 57-58 (excerpts); Tsement (USSR) 1962 [v. 28] no. 4, p. 21; Na Stroikakh Rossii (USSR) 1962, no. 8, p. 25; and from Stroitel'naya Gazeta (USSR) 1962, 8 Aug; Sovetskaya Estoniya (USSR) 1962, 10 Aug.
##A complete translation is available from HMSO $0.77, $9.86/year in NLL Translations Bulletin, 1962, v. 4, no. 12.

DESCRIPTORS: *Industrial production, Machines, Construction, *Excavators, Quality control, *Hoists, Loaders, Cargo vehicles, Fork lift vehicles, *Conveyors, Vibrators (Mechanical), Elevators.

Contents:
Machine operators demand improvement of quality of excavators
##Hoisting and transporting machines
Assembling the alternating excavator, by N. Bondar'
Jaw-type tractor loaders, by M. M. Pomerantsei
Horizontal two-tube vibrating transporter type C-618
Crane on pneumatic wheels
Construction freight elevator.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CONSTRUCTION MACHINERY NO. 23. 7 Dec 62 [50]p. JPRS: 16577.
Order from OTS or SLA $4.60 63-13532

Trans. of Stroitel'nye i Dorozhnye Mashiny (USSR) 1962 [v. 7] no. 9, p. 10 (excerpts) 16-18 (excerpts) 31-36 (excerpts); Shakhtnoe Stroitel'stvo (USSR) 1962 [v. 6] no. 9, back cover; Na Stroikakh Rossii (USSR) 1962, no. 7, front cover; no. 9, front cover (excerpts) Gornyi Zhurnal (USSR) 1962, no. 9, p. 34; VDNKh

SSSR. Informatsionnyi Byulleten' [sic] 1962, no. 11, p. 34-36; Mashinostroitel' (USSR) 1962 [no. 9] p. 7; Montazhnye i Spetsializirovannye Raboty v Stroitel'stve (USSR) 1962 [v. 24] no. 10, p. 1-3, 27-28 (excerpts); and selected articles from 5 Russian newspapers.

(Machinery, Fabrications and Accessory Equipment,
DESCRIPTORS: *Industrial production, Machines, Cement, Transportation, Pneumatic devices, *Pumps, *Hoists, *Earth moving equipment, *Bulldozers, Excavators, *Drilling machines, *Cargo vehicles, *Road building equipment, Design, Specifications.

Contents:
Equipment for intraplant transportation of cement, by V. Ya. Petruk
New machines
Rapidly changeable lightened bulldozers, by V. D. Tkach
2LPM-10/600 sinking winch
EKG-4-59 excavator
BSV-2drilling tool
Screw canal dredger, by D. V. Krivobokov
Self-propelled diesel electric crane
Five years of red tape, by A. Anuchkin and others
The S-652 automatic cement truck
On the manufacture of self-propelled equipment
The mechanization of finishing jobs
Machines and years
Self-propelled wheeled construction and road machines, by A. A. Vasil'ev and M. N. Krimerman
A new stone working machine
Self-propelled diesel electric crane
Design work must be centralized, by B. Simkin
On the awards to participants of the VDNKh USSR for 1961
In the Ministry of Construction RSFSR.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CONSTRUCTION MACHINERY NO. 24. 27 Dec 62 [48]p. JPRS: 16870.
Order from OTS or SLA $4.60 63-13648

Trans. of VDNKh SSSR. Informatsionyi Byulleten' [sic] 1962, no. 9, p. 21; Mekhanizatsiya Stroitel'stve (USSR) 1962 [v. 19] no. 11, p. 5-8, 20-23; Na Stroikakh Rossii (USSR) 1962, no. 10, p. 37; and from Stroitel'naya Gazeta (USSR) 1962, 30 Sep, p. 3; Ekonomicheskaya Gazeta (USSR) 1962, no. 41[62] p. 3, 10, 48.

DESCRIPTORS: *Industrial production, Machines, *Road building equipment, *Cargo vehicles, Standards, *Earth moving equipment, *Hoists, *Excavators, Electric motors, *Construction.
Contents:
Construction and road machinery section of the pavillion
Those who will not venture taking responsibilities, by B. L'vov
Recent industrial changes in eastern Siberia
Both expensive and unsatisfactory, by M. Magerov
Machines with standardized sub-assemblies and units, by A. A. Vasil'ev
New continuous service earth moving machines, by Yu. G. Manuilov
The MPM mobile lift, by S. Savinov
The new ETTS-401 chain-type trench excavator, by V. A. Rumyantsev
For sale immediately
Electric motors for sale by the Laptev coal machine plant
Wanted
The Krasnyi Kotel'shchik plant is selling casting machines.

Agussol, M.
SOME ECONOMICAL ASPECTS OF DRILLING WITH THE TURBINE (Quelques Aspects Économiques du Forage à la Turbine). 25 Apr 56 [9]p. (foreign text included).
Order from SLA $1.10 62-16654

Trans. of Techniques du Pétrole (France) 1956, Feb, p. 4308 and 4310.

DESCRIPTORS: Economics, *Compressors, *Turbines, *Drilling machines, Costs, Velocity.

Erdelyi, Ferenc.
DEVICE FOR ROLLING A HELICAL PROFILE ON A CYLINDRICAL WORKPIECE, tr. by L. A. N. 11 Jan 62, 5p. (1 fig. omitted).
Order from OTS or SLA $1.10 62-15760

Trans. of Dutch patent 92, 382, cl. 7 f, gr. 9, internat. cl. B 21 h, by Firma Wilhelm Fette, Prazisionswerkzeug-Fabrik, appl. 197, 165 (divided from rejected patent appl. 169, 231, filed 1 May 52) filed 12 May 55, laid open to public inspection 15 May 59, granted 16 Sep 59, pub. 15 Oct 59 (Corresponding German patent 946, 619 to same applicant, filed 29 Dec 51, pub. 2 Aug 56).

DESCRIPTORS: *Rolling mills, Cylindrical bodies, *Helixes, Manufacturing methods, Machines.

Forichon, Gaston-Sébastien.
PROCESSES OF MANUFACTURING A GEAR PUMP AND GEAR PUMPS OBTAINED BY SUCH PROCESSES OR SIMILAR PROCESSES, tr. by J. B. 5 Sep 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 62-33242

Trans. of French patent 1, 073, 038, gr. 5, cl. 5, appl. 17 Mar 53, granted 17 Mar 54, pub. 17 Sep 54.

DESCRIPTORS: *Rotary pumps, Manufacturing methods, Gears, Wedges.

The invention relates to a process for manufacturing a gear pump, characterized in that a casing containing two housings adapted to receive the pinions is made first, then there is inserted in the casing a wedge equal in width to the thickness of the pinions together with their operational clearance, the bearings are inserted on either side of the wedge, and the external surfaces of the casing are rectified. (Author)

Förster, S.
NON-DESTRUCTIVE MATERIALS TESTING. 29 Mar 50, 11p.
Order from SLA $1.60 62-18343

Trans. of Werkstatt und Betrieb (West Germany) 1948 [v. 81] no. 3, p. 71-74 and 103-104.

DESCRIPTORS: Test methods, *Non-destructive testing, *X-ray diffraction analysis, Magnetos, *Magnetic detectors, *Ultrasonic equipment.

Hany, Harald.
CENTRIFUGAL PUMP FOR HOT OR BOILING LIQUIDS SUPPLIED AT A LOW INLET LEVEL, tr. by P. C. C. 14 Sep 62, 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-33238

Trans. of German patent 817,077, cl. 59b, gr. 2, by Henschel & Sohn G.m.b.H., pat. from 20 Apr 50, grant announced 23 Aug 51, pub. 15 Oct 51.

DESCRIPTORS: *Centrifugal pumps, *Impellers, Water pump rotors, Liquids, Fluid flow.

This centrifugal pump, especially for hot or boiling liquids supplied at a low inlet level is characterized in that the inlet diameter at the blade edges of the impeller is considerably greater than the inlet diameter in the pump casing.

Hertig, Ernst.
TORCH FOR REMOVAL OF DEPOSITS FROM THE HEATING SURFACES OF BOILERS, AND THE LIKE. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18361

Trans. of Swiss patent 139,758, 15 May 30.

DESCRIPTORS: *Blow torches, *Boilers, *Scale.

Iwascheff, W.
SMOOTH ROLLING OF CAST IRON SLIDEWAYS FOR MACHINE TOOLS. [1962] 6p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18372

Trans. of Werkstattstechnik und Maschinenbau (Germany) 1949, v. 39, no. 8, p. 233-236.

DESCRIPTORS: *Machine tools, *Cast iron, Surface area, Precision finishing.

Kirillov, I. I., Tereshkov, A. A., Topunov, A. M.
A TURBINE STAGE HAVING GUIDE CHANNELS WITH FLAT WALLS [AND] THE DESIGN OF A STAGE WITH CONICAL RESTRICTING SURFACES. 19 July 62 [31]p. 13 refs. FTD-TT-62-665; AD-286 140.
Order from OTS or SLA $3.60 62-32303

Unedited rough draft trans. of Teploenergetika (USSR) 1961 [v. 8] no. 12, p. 45-51 and 55-59.

DESCRIPTORS: Turbines, *Steam turbines, *Gas turbines, *Guide vanes, Turbine blades, Model tests, Surfaces, Conical bodies, Cylindrical bodies, Nozzles, Design.

Klyushnikov, Yu. P. and Orlenko.
AUTOMATIC MACHINE FOR CUTTING AND STAMPING HOUSEHOLD SOAP (Avtomat dlya Rezki i Shtampovki Khozyaistvennogo Myla). Aug 62 [7]p. RTS 2139.
Order from OTS or SLA $1.10 62-32499

Trans. of Masloboino-Zhirovaya Promyshlennost' (USSR) 1961, v. 27, no. 1, p. 36-38.

DESCRIPTORS: *Soaps, Manufacturing methods, Machines, *Cutting tools, Dies.

Küttner, Heinrich and Kap-herr, Wolf von.
CENTRIFUGAL PUMP FOR CONVEYING HOT WATER, tr. by L. A. N. 14 Sep 62, 4p. (figs. omitted) 2 refs.
Order from OTS or SLA $1.10 62-33239

Trans. of German patent 832,548, cl. 59b, gr. 1, by Henschel & Sohn G.m.b.H., pat. from 4 Apr 50, grant announced 24 Jan 52, pub. 24 Mar 52.

DESCRIPTORS: *Centrifugal pumps, *Impellers, Water pump rotors, Cavitation.

The invention relates to a centrifugal pump for conveying hot water, and its basic object consists in eliminating the danger of cavitation which may lead to a complete interruption of the flow. The impeller is constructed so that a shockfree inflow as well as a balancing of the partial flows conveyed through the impeller and a cavitation-free pressure increase are obtained. (Machinery, Fabrications and Accessory Equipment, One or more impeller zones of high specific speed are provided ahead of one or more zones of low specific speed, and free annular zones are arranged between these zones.

Nacken, W.
NEW MULTIPLE WIRE DRAWING MACHINE WITH REDUCED AND CONTROLLED SLIP OF THE WIRE. [1962] 3p. (figs. refs. omitted).
Order from SLA $1.10 62-18229

Trans. of Draht (West Germany) 1954, v. 5, no. 8, p. 288-289.

DESCRIPTORS: *Wire, *Drawing (Machine processing), *Wire-winding machines, Control.

Onishi, Idao, Kyoji, Homma, and Kimiko, Shimura.
MEASUREMENT OF THE EFFICIENCY OF A PULPING MACHINE. [1962] 20p.
Order from K-H $25.00 K-H 11436f

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1954, v. 90, p. 131-141.

DESCRIPTORS: Measurement, *Wood pulp, *Machines, Effectiveness.

Opitz, H.
SURVEY AND CLASSIFICATION OF PRECISION MACHINING METHODS. [1962] 11p. (figs. tables refs. omitted).
Order from SLA $1.60 62-18233

Trans. of Werkstattstechnik u[nd] Maschinenbau (Germany) 1953, v. 43 [no. 3] p. 92-97.

DESCRIPTORS: *Machining, *Precision finishing, Classification, Chipping hammers, *Cutting tools, *Grinders, Surfaces, Quality control, Electric machinery, Aluminum alloys, Silicon alloys, Crystal structure.

Rapp, R.
RIVETING ON ECCENTRIC PRESSES. [1962] 8p. (figs. tables formulae refs. omitted).
Order from SLA $1.10 62-18245

Trans. of Werkstatt und Betrieb (West Germany) 1947, v. 80 [no. 7] p. 169-171.

DESCRIPTORS: *Metal forming presses, *Rivets, *Riveted joints, Riveting hammers.

Schunk, Max and Foster, Hermann v.
DEVICE FOR THE LOOSENING OF COLD DRAWN TUBES FROM THE MANDREL BY MEANS OF A PLURALITY OF ROLLS, PREFERABLY TWO PAIRS OF ROLLS, tr. by G. E. 19 Apr 62, 7p. (6 figs. omitted).
Order from OTS or SLA $1.10 62-24515

Trans. of German patent 704,757, cl. 7b, gr. 4/40, pat. from 27 July 37, grant announced 6 Mar 41, pub. 5 Apr 41.

DESCRIPTORS: *Rolling mills, Pipes, *Drawing (Machine processing), Machines.

Tiraspolsky, W., Rouviere, R., and Chare, J.
ROTARY DRILLING AND THE DEVELOPMENT OF TURBODRILLING (Le Forage par Moteur Souterrain et le Developpement du Turboforage). [1962] [63]p.
Order from SLA $6.60 62-16656

Trans. of Rev[ue de l]Inst[itut] Franc[ais du] Petrole et Ann[ales des Combustibles Liquides] 1955, v. 10, no. 8, p. 886-911.

DESCRIPTORS: *Drilling machines, Compressors, *Turbines, *Rotary compressors, Industrial machines.

The authors have tried to give a summary of the theory of the drilling turbine and of the methods of turbine drilling for the use of the technicians already acquainted with the practical development of these technics. The article contains also a study of the economical and industrial conditions that are favorable for the (Machinery, Fabrications and Accessory Equipment, expansion of turbine drilling with special reference to the present situation in France. (Author)

Zeissl, Ignaz.
AIR PUMP OR SCAVENGING PUMP WITH ANNULAR PLATE VALVES, tr. by J. B. 6 Sep 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 62-33240

Trans. of Austrian patent 162,142, cl. 27a, appl. 11 June 46, filing date considered as 23 Feb 40 (filing date in the German patent office) beginning of patent term 15 Apr 48, pub. 25 Jan 49.

DESCRIPTORS: *Pumps, *Compressors, *Valves.

An air pump or scavenging pump with annular plate valves is patented characterized in that each valve plate rests on a plate-shaped valve support member wherein there are provided radial channels, preferably grooves, permitting the passage of air from the inner to the outer circumference of the valve without perforations in the valve support member, so that the air passes through the valves exclusively in radial direction.

Machine Parts and Mechanisms

Anempodistov, V. F., Alekseev, A. E., and Urusov, I. D.
A TURBOALTERNATOR ROTOR. [1962] 3p. [DSIR] NLL M.3546.
Order from OTS or SLA $1.10 62-24638

Trans. of USSR description of invention for patent 124510, claim filed 15 May 59 under no 628139/24, by Akademiya Nauk SSSR, Inst[itut] Elektromekhaniki (reprinted from Byulleten Izobretenii (USSR) 1959, no. 23). [p. 28]

DESCRIPTORS: Electric power production, *Generators, *Turbine wheels, Design, Electric wire.

A turboalternator rotor is provided on its cylindrical surface with longitudinal slots in which a winding is embedded. The end sections of the winding are embedded in transverse slots situated on the cylindrical surface of the rotor body perpendicular to the longitudinal slots. The slots are closed with wedges. (Author)

HYDRAULIC BRAKING MECHANISM - ESPECIALLY FOR POWER-DRIVEN VEHICLES. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18455

Trans. of German patent 548,939, 21 Apr 32, pub. 7 Apr 32, pat. from 17 Sep 31, by Daimler-Benz A. G.

DESCRIPTORS: *Brakes, *Power drives, *Hydraulic brakes, *Vehicle brakes.

Niclas, Walter.
DRIVING MEMBER, E. G., CONVEYOR BELT, CONSISTING OF ELASTIC MATERIAL CAPABLE OF BEING CAST OR MOLDED BY INJECTION AND CONTAINING IMBEDDED REINFORCEMENTS, tr. by P. C. C. 12 Apr 62, 5p. (4 figs. omitted) 2 refs.
Order from OTS or SLA $1.10 62-24518

Trans. of German Auslegeschrift (DAS) 1,047,545, cl. 47 d 5, internat. cl. F/06 g, by Continental Gummi-Werke A. G., appl. 29 Aug 56, appl. announced and Auslegeschrift pub. 24 Dec 58.

DESCRIPTORS: *Conveyors, Elastomers, Molding materials, Injection, Manufacturing methods.

Manufacturing Equipment and Processes

WELDING OF NONFERROUS ALLOYS, RARE METALS, AND PLASTICS: [SELECTED PARTS]. 8 June 62 [199]p. 44 refs. FTD-TT-62-123; AD-281 740. Order from OTS or SLA $13.50 62-32410

Unedited rough draft trans. of [Moskovskoe Vysshee Tekhnicheskoe Uchilishche. Trudy] (USSR) 1961, v. 101, p. 5-107, 186-216, 236-252.

DESCRIPTORS: *Welding, *Alloys, Metals, *Plastics, *Electron beams, Vacuum systems, *Molybdenum, *Aluminum alloys, Spot welding, *Ultrasonic equipment, *Electronic equipment, *Sheets, Buckling, Rolling mills, Pressure capsules, *Heat exchangers, *Arc welding, Automation

Contents:
Vacuum electrom-beam welding of metals, by N. A. Ol'shanskii and Yu. N. Zorin
Fusion welding of technical molybdenum, by N. A. Ol'shanskii and A. V. Mordvintseva
Ultrasonic spot-welding of aluminum alloys, by N. A. Ol'shanskii and M. N. Krumbol'dt
Use of ultrasound for welding metals used in the electronics industry, by B. V. Amosov
Elimination of buckling in thin-sheet welded structures by surface rolling, by S. A. Kurkin and V. A. Vinokurov
The development of technology and equipment for pulsed power seam welding of bellows and heat exchangers, by N. L. Kaganov
The influence of argon and type 18-8 welding wire composition on the properties of seam metal, by A. I. Akulov and V. V. Spitsyn
Welding equipment for automatic electric arc welding of curved joints, by N. S. L'vov and A. P. Igoshin

Dumont-Fillon, J.
RECOVERY OF UNBURNT GASES FROM A PURE OXYGEN CONVERTER (WITH DISCUSSION). Dec 62. Order from BISI £2 10s BISI-3058

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1962 [v. 19] no. 2, p. 441-446.

DESCRIPTORS: *Furnaces, *Waste gases, Recovery.

Höhle, H.
PRACTICE AND DEVELOPMENT OF THE WIRE INDUSTRY IN AMERICA SINCE 1939. 28 June 50, 18p. (figs. tables omitted). Order from SLA $1.60 62-18356

Trans. of Stahl und Eisen (West Germany) 1950, v. 70, no. 2, p. 41-51.

DESCRIPTORS: *Wire, *Industry, Industrial production, *Manufacturing methods.

Manthey, Willi and Schmitz, Engelbert.
TESTING DEVICE FOR CONTINUOUSLY TRAVELING METAL BANDS AND SHEETS, tr. by F. H. B. 7 Sep 62, 12p. (figs. omitted). Order from OTS or SLA $1.60 62-33247

Trans. of German Auslegeschrift (DAS) 1,060,626, cl. 42K 46 06, internat. cl. G01n, by BWG Bergwerkund Walzwerk-Maschinenbau G. m. b. H., appl. 8 Oct 57, appl. announced and laid open to inspection 2 July 59.

DESCRIPTORS: *Non-destructive testing, Test methods, *Supersonics, Sound generators, Metals, Sheets, Conveyors.

A testing device for metal bands and sheets, preferably with employment of supersonic testing devices is claimed, characterized in that the portion of the testing device supporting the test elements proper is movable and moves along with the test piece which travels in a continuous work flow, at least over part of the path at the same speed as, or a lower speed than, the test piece, the testing device and process being controlled by the passage of the test piece over levers, cams, switches, or the like.

Poncelet, A.
COMPARISON OF IMPROVEMENTS MADE IN VARIOUS CONTINUOUS BILLET COGGING MILLS. Dec 62. Order from BISI £4 5s BISI-3013

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1961, v. 18, no. 10, p. 2247-2262.

DESCRIPTORS: *Rolling mills, Design, Industrial production.

Sorin, Ya.
WHAT THEN IS DEPENDABILITY? 13 June 62 [7]p. FTD-TT-62-830. Order from OTS or SLA $1.10 62-32508

Unedited rough draft trans. from Pravda [Moscow] (USSR) 1962, 11 Jan, p. 2.

DESCRIPTORS: Industrial equipment, Reliability, Industrial production, *Quality control.

It seems to us that by the term "dependability" one should understand the likelyhood of faultless, unfailing functioning of any industrial device (equipment or industrial article) under determined conditions of operation. Proportionally with the development and perfecting of technology, proportionally as the various industrial devices and articles become more complicated, their dependability becomes the basic, deciding index of their quality. In order to heighten the responsibility of the enterprises and the councils of national economy for the articles put out by them it is necessary that the indices of dependability be included in the Government standards for series manufacturing in the form of technical requirements for the functioning of each new device. (Extracted)

APPARATUS FOR STORING AND FOR REMOVING FROM STORAGE MATERIALS IN BULK, tr. by J. B. 18 Oct 62, 8p. (figs. omitted).
Order from OTS or SLA $1.10 62-33777

Trans. of French patent 1,037,792, gr. 5, cl. 6, by Société Anonyme dite: Jaruza A. G., appl. 28 May 51, granted 6 May 53, pub. 22 Sep 53.

DESCRIPTORS: *Conveyors, Design, Storage, Materials Handling.

APPARATUS FOR STORING AND FOR REMOVING FROM STORAGE MATERIALS IN BULK, tr. by J. B. 19 Oct 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 62-33775

Trans. of French 1st. addition patent 61,249 to [patent] 1,037,792, gr. 5, cl. 6, by Societe dite: Jaruza A. G. (Switzerland) appl. 5 June 51, granted 20 Oct 54, pub. 5 Apr 55 (original pat. appl. 28 May 51.

DESCRIPTORS: *Conveyors, Design, Storage, Materials Handling.

DEVICE OPERATING AS BUFFER, tr. by F. H. B. 13 Sep 62, 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-33236

Trans. of German patent 446,174, vl. 20e, gr. 25, by Berliner Strassenbahn-Betriebs-G. m. b. H., pat. from 30 May 26, grant announced 9 June 27, pub. 24 June 27.

DESCRIPTORS: Vehicles, *Impact shock, Buffers, Metal plates.

A device operating as buffer is described in which the shock is absorbed by compressible elements arranged in series in the direction of the shock. Intermediate expansible parts are joined to the compressible elements, in such a way that the latter extend transversely to the direction of the chock by the flattening of the first mentioned elements, and are possibly torn.

MOTORIZATION, 1959 [VOL. 15, NO. 2: SELECTED ARTICLES] tr. by Betty Madzelan. [1962] [33]p. H-6067.
Order from OTS or SLA $3.60 62-25221

Trans. of Motoryzacja (Poland) 1959 [v. 15, no. 2] p. 31-36 and 49-51.

DESCRIPTORS: *Automotive industry, Economics, *Vehicles, Distribution, *Commerce, Cargo vehicles, Passenger vehicles, Roads, Tables, Poland.

Contents:
Territorial distribution of automobile stock in Poland, by I. Wojciechowski and E. Lissowska
Specialized rolling stock for needs of internal commerce, by W. Zakrzewski and J. Rostafinski
Polish motorization in figures, by A. Rostocki.

SOVIET TRANSPORTATION: [SELECTED] TRANSLATIONS NO. 34. 17 Dec 62 [56]p. JPRS: 16695.
Order from OTS or SLA $5.60 63-13540

Trans. of Rechnoi Transport (USSR) 1962 [v. 21] no. 9, p. 5-10, 27-28, 31-32; Morskoi Flot (USSR) 1962 [v. 22] no. 10, p. 30-32; and from Vodnyi Transport (USSR) 1962, 6 Oct, p. 1-2, 4; 9 Oct, p. 1, 4; 13 Oct, p. 1; 16 Oct, p. 1-4; 18 Oct, p. 1-2.

DESCRIPTORS: *Transportation, *Transports, *Cargo ships, Fleets, Ships, Railroad cars, Harbors, Operations research, Inland waterways, Icebreakers, Bridges, Tankers, Personnel, Training, Floating docks, Towed bodies, Cereals, Conveyors.

Contents:
Use of fleet must be decisively improved
Summaries of the fulfillment of the shipment plan in Aug and during the first eight months of 1962
Urgent problems in organizing shipments in mixed railroad-water communications, by K. Tugengol'd and A. Zhdanova
Linking the basic index of port operations with the fleet movement schedule, by V. Barmin
Trial results of the "Volgo-Don" class of motor ships, by M. Andrievskii
Belorussia receives an outlet to the sea, by G. Nikitin
The line icebreaker "Leningrad", by A. Dorokhov
New motor ships for the fishermen of the Zapolyar'e, by F. Anfuriev
Shipbuilding news, by M. Shekhter
Thirty-fourth ship launched in Denmark for Soviet Union
Scores of new ships for service on the upper Ob', by M. Lykov
A bridge over the Dvina
New tanker "Lyubotin" built in Japan for the USSR, by L. Shustova
Two new passenger motor ships
New port facilities built this year
New ships of the Soviet maritime and river fleets
Training programs of the ministries of the maritime fleet and river fleet
A bridge across the Kama
Towing of first section of floating dock from Odessa to Murmansk completed
Grain from the new harvest, by I. Geguzin
A new river technical school.

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 23. 6 Nov 62 [53]p. JPRS: 16046.
Order from OTS or SLA $5.60 62-33697

Trans. of Za Rulem (USSR) 1962 [v. 20] no. 5, p. 10; Avtomobil'nyi Transport (USSR) 1962 [v. 40] no. 3, p. 14, 19-23, 29-30; no. 6, p. 26, 32-33, 56; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 5, p. 73-76; Mashinostroenie (USSR) 1962, no. 3, p. 99-100; and selected articles from June-Aug 62 issues of 9 Russian newspapers.

DESCRIPTORS: *Automotive industry, *Industrial production, Cargo vehicles, Locomotive cranes, Trailers, Internal combustion engines, Passenger vehicles, Industrial equipment, Rings, Machining, Agricultural machines, Plastics, Road building equipment.
Contents:
Serial production of KAZ-606 prime movers has begun, by D. Kartevelishvili
The AKG-6 truck crane
The MAZ-5232 semi-dump trailer
The MAZ-510 dump truck
A new truck train
Dump truck trains of main administration of motor vehicle transport of the Moscow city soviet of worker's deputies
The BelAZ-531 prime mover
The NAMI-790 semi-trailer/panel carrier, by S. Lamunin
A truck train for hauling pipes
Truck trains for construction parts
The ZIL-130 engine
The ZIL-138 engine
The ZIL-375 engine
The KhADI-2 economy car, by A. Podrez (excerpt)
The RAF-97 7D Latvis microbus, by L. I. Zaster
The semi-trailer/panel carrier model 790, by L. Ya. Martsynovskii and others
The vesna bicycle
A truck train with a 54-ton load capacity
The fight for an effective use of new equipment is poorly conducted at the Minsk motor vehicle plant
A semi-automatic machine grinds rings
New vehicles are tested in Kara-Kuma, by G. Guseinov
Thought concerning the supply of reserves, by L. Fominykh
UAZ-469 truck tested, by A. Saidov
Agricultural trailers: selected portions, by L. Ya. Martsinovskii and Yu. P. Sorochan
Autobodies made of plastic
Mighty Belorussian motor vehicles
A new asphalt spreader
The Minsk motor vehicle plant.

Nielsen, Karlo Harold Victor.
IMPROVED FORK LIFT TRUCK, tr. by J. R-P
16 Oct 62, 15p. (figs. omitted).
Order from OTS or SLA $1.60 62-33778

Trans. of French patent 1,229,113, internat. cl. B66f, appl. filed 13 June 59, granted 21 Mar 60, pub. 5 Sep 60 (pat. appl. filed Denmark 14 June 58).

DESCRIPTORS: *Fork-lift vehicles, Cargo vehicles, Design, Transportation.

Wilfert, K. and Fiala, E.
DEMANDS ON THE STRENGTH AND RIGIDITY OF CAR BODIES [Anforderingen an die Festigkeit und Steifigkeit von Fahrzeugkarosserien]. [1962] 37p.
Order from K-H $46.25 K-H 9751

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1959, v. 61, no. 9, p. 237-246.
Another trans. is available from SLA mi$3.30, ph$7.80 as 60-14498 [1960].

DESCRIPTORS: Vehicles, *Passenger vehicles, Structural properties, Stresses

MATERIALS

NEW MATERIALS ARE IN PRODUCTION. 10 Aug 62 [9]p. FTD-TT-62-984; AD-284 112.
Order from OTS or SLA $1.10 62-33391

Unedited rough draft trans. of Ekonomicheskaya Gazeta (USSR) 1961, no. 19, p. 4.

DESCRIPTORS: *Industrial production, *Materials, *Metals, *Plastics, *Chemicals.

Borgne, J. le and Jaumain, M.
CEMENT SAND MOULDING. Dec 62.
Order from BISI £3 15s BISI-2810

Trans. of Fonderie (France) 1961, no. 185, p. 209-219.

DESCRIPTORS: *Cements, Sand, *Molding, Design, Costs, Chemical analysis.

Kollmar, M.
LIQUID NOBLE METAL SOLUTIONS FOR METALLIZING CERAMIC MATERIALS, GLASS, AND PLASTICS. [1962] 5p. (fig. omitted).
Order from SLA $1.10 62-18406

Trans. of Metall (West Germany) 1953 [v. 7] June, p. 427-429.

DESCRIPTORS: Liquid metals, *Metal coatings, *Gold, *Platinum, *Silver, *Ceramic materials, *Glass, *Plastics, Electronic equipment, Soldering alloys, Electrolytes.

The composition, method of working up, and application of noble metal preparations for the production of noble metal coatings on porcelain, ceramic specialty materials, glass, quartz, mica, and plastics are described; these are used chiefly in figh-frequency technique for the production of condensers, coils, and resistances, for soft-solder compounds, and as basis material for electrolytic coatings. Information is given also on the characteristics of the noble metal coatings produced with these preparations. (Author)

Sogolova, T. I. and Slonimskii, G. L.
THE THERMOMECHANICAL METHOD OF STUDYING POLYMERS. 1 Aug 62 [17]p. 32 refs. FTD-TT-62-723; AD-284 107.
Order from OTS or SLA $1.60 62-33068

Unedited rough draft trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1961, v. 6, no. 4, p. 389-393.
An abstract trans. is available from OTS or SLA $1.10 as 62-13284, AID-61-148, 25 Oct 61, 2p.

DESCRIPTORS: *Polymers, Tests, Test equipment, Test methods, Solids, Mechanical properties, Physical properties, Thermodynamics, Deformation, Stresses, Heat, Phase transitions, Elasticity, Molecular weight, Stability, Transition temperature, Solvates, Adsorption, Vulcanization.

For abstract see Technical Translations 8: 263, 1962.

Adhesives and Sealants

Gossot, J.
THE BONDING OF RUBBER TO METAL BY MEANS OF THE NEW CHEMICAL DERIVATIVES OF RUBBER
18 Jan 50, 9p. (figs. tables omitted).
Order from SLA $1.10 62-18353

Trans. of Revue Générale du Caoutchouc (France) 1949 [v. 26, no. 4] p. 273-278.

DESCRIPTORS: *Metal-rubber adhesives, *Bonding, Chemical bonds, Synthetic rubber, Thermosetting resins, Acrylic resins, *Nitrile rubber, *Acrylonitrile *Adhesion, Molecular structure, Surface tension.

Hanyu, Tatsuro, Koyama, Akishige, and Masuzawa, Teiichi.
VINYL BINDING TAPE. [1962] 5p.
Order from OTS or SLA $1.10 62-16329

Trans. of published Japanese patent 35-1831, 8 Mar 60, application no. 33-2657, 4 Feb 58, by Furufuji Industries Co., Ltd. and Furukawa Electric Industry Co., Ltd.

DESCRIPTORS: *Vinyl chlorides, *Binders, *Electric insulating tapes, Insulating materials, Electric insulation, Rubber, Synthetic rubber, *Adhesive tapes, Electrical industry, Copolymerization.

Kondo, Y.
METHOD OF ADHERING VINYL RESINS TO RUBBER. [1962] 5p.
Order from OTS or SLA $1.10 62-16327

Trans. of published Japanese patent 30-8087, 7 Nov 55, appl. 1 Apr 53, by Shibata Rubber Industries, Ltd.

DESCRIPTORS: *Rubber, *Resins, *Vinyl radicals, *Adhesion, Laminates, Sandwich construction, Adhesives *Rubber adhesives.

On the surface of the vinyl resin to be laminated, the first adhesive layer is formed consisting of polybutadiene-acrylonitrile copolymer as over one-half of the solids in the adhesive composition. Over this, the second adhesive layer is formed consisting of polychloroprene as over one-third of the solids in the adhesive composition. Through the intermediate of the two layers the polar characteristics of the vinyl is altered and is laminated to the rubber. (Author)

Takeuchi, E. and Takahashi, R.
ADHESIVE FOR VINYL RESIN. [1962] 3p.
Order from OTS or SLA $1.10 62-16326

Trans. of published Japanese patent 30-8732, 29 Nov 55, appl. 20 Dec 52, by Shibata Rubber Industries, Ltd.

DESCRIPTORS: *Vinyl plastics, Plastics, Thermoplastics, *Adhesives, Chemical analysis.

Adhesives for vinyl resins made by dissolving acrylate-vinylchloride copolymer, polyvinylacetate, polyacrylate and vinyl stabilizer in such solvents as the lower ketones or acetates which have high evaporation rate and do not swell vinyl film are described. (Author)

Yamakawa, K., Kanefuji, Y., and Hanada, K.
METHOD OF PRODUCING PRESSURE-SENSITIVE ADHESIVE AGENTS FOR TAPE. [1962] 4p.
Order from OTS or SLA $1.10 62-16328

Trans. of published Japanese patent 30-7089, 3 Oct 55, appl. 21 Jan 54, by Sekisui Chemical Co.

DESCRIPTORS: *Adhesive tapes, Phenolic resins, Plastics, Benzenes, Vinyl chlorides, Pressure, Sensitivity, Mixtures, *Adhesives, Manufacturing methods, Copolymerization.

A method to produce pressure sensitive adhesives for adhesive tape by dissolving aromatic hydrocarbon (benzene or toluene) soluble polyvinylbutyral, compatible vinylchloride-vinylacetate copolymer containing hydroxyl group and castor oil mixtures in aromatic hydrocarbon and ketone. Non-drying alkyd resin or 100% phenolic resin may be added. (Author)

Ceramics and Refractories

SOVIET CERAMICS AND REFRACTORIES: [SELECTED] ARTICLES. 21 Dec 62 [42]p. 15 refs.
JPRS: 16807.
Order from OTS or SLA $4.60 63-13451

Trans. of Ogneupory (USSR) 1962 [v. 27] no. 10, p. 449-453, 457-472, 480-481.

DESCRIPTORS: Ceramic materials, Refractory materials, Ores (Metal sources), *Chromite, *Beryllium compounds, Oxides, *Carborundum, Silicon compounds, Nitrides, *Ceramic coatings, *Heating elements, Conferences.

Contents:
Structure and properties of chromite ores from new deposits in Kazakhstan, by S. M. Zubkov and E. N. Yusupova
Certain properties of a porous ceramic made of beryllium oxide, by I. Ya. Guzman and D. N. Poluboyarinov
Phase composition of carborundum refractories with a silicon nitride binder, by N. I. Voronin and N. I. Krasotkina
Properties of certain protective coatings deposited on metal by the gas-flame spray, by Yu. A. Pirogov
Conference on the coordination of research work on nonmetallic electric heating elements, by N. I. Voronin
Conference on lightweight refractories, June 62, by Z. E. Dobrin.

Dewald, W. and Schmidt, H.
PHOSPHATE GLASSES AND THEIR TECHNICAL EVALUATION, tr. by Bertha P. Klenova. 24 Mar 53, 9p. 9 refs. TVA 3179.
Order from OTS or SLA $1.10 62-25805

Trans. of Angew[andte] Chem[ie] (West Germany) 1953, v. 65, p. 78-81.

DESCRIPTORS: *Glass, Test methods, *Phosphates, Sodium compounds, *Soaps, Calcium compounds, Fatty acid esters.

Phosphate glasses with a mole ratio $Na_2O:P_2O_5$ = 1:1 to 5:3 may contain in complex solution calcium, magnesium, and other metals. The dissolving power for calcium oleate at room temperature, for glasses with a mole ratio 1:1 to 7:5, is approximately the same but at higher temperatures there is a pronounced optimum at a mole ratio 9:7 to 12:10. Compared to "hexametaphosphate," $(NaPO_3)$ x, glass with a mole ratio $Na_2O:P_2O_5$ = 1:1, these glasses are more sensitive to storage in humid air. (Author)

Herfurth, Otto R.
THE CALIBRATION OF GLASS TUBES, I-II, BY GEORG HELM: A COMMENT. [1962] 9p.
Order from SLA $1.10 62-18115

Trans. of Glas-Email-Keramo-Technik (West Germany) 1953 [v. 4] no. 12, p. 437-439 (original article pub. in no. 5, p. 172-175 and no. 7, p. 247-249).

DESCRIPTORS: *Laboratory equipment, Calibration, Manufacturing methods, *Glass.

(See also 62-18114)

Jagitsch, Robert.
EXAMINATION OF THE CHEMICAL COMPOSITION AND RESISTANCE OF GLASS SURFACES (Undersökning av Glasytors Kemiska Sammansättning och Resistens) (Untersuchungen über die Chemische Zusammensetzung und die Resistenz von Glasoberflächen). [1962] [22]p. (foreign text included) 12 refs.
Order from SLA $2.60 62-18117

Trans. of Glasteknisk Tidskrift (Sweden) 1956, v. 11, no. 5, p. 127-136.

DESCRIPTORS: Surfaces, *Glass, Resistance, Chemical analysis, Liquids, Continuous media, Photoengraving, Ion exchange, Porosity.

Koz'min, M. I.
ARTIFICAL COOLING OF THE TOP COURSES OF BLOCKS IN A GLASS TANK (Iskusstvennoe Okhlazhdenie Verkhnego Ryada Brus'ev Vannoi Pechi). [1962] [18]p. (foreign text included) 1 ref.
Order from OTS or SLA $1.60 62-14898

Trans. of Steklo i Keramika (USSR) 1958, v. 15, no. 3, p. 9-13.

DESCRIPTORS: *Glass, *Air cooled, Production, Quality control, Friction, Temperature, *Refractory materials, *Clays, Furnaces.

Kröger, Carl and Kreitlow, Gerhard.
THE HEATS OF SOLUTION AND FORMATION OF THE SODA LIME SILICATES (Die Lösungs- und Bildungswärmen der Natronkalksilikate). [1962] [31]p. (foreign text included) 27 refs.
Order from SLA $3.60 62-18121

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1956, v. 29, no. 10, p. 393-400.

DESCRIPTORS: *Glass, Sodium compounds, Calcium compounds, *Silicates, Heat of formation, Heat of solution.

The heats of solution of sodium disilicate, of the three ternary soda lime silicates as well as of a few soda lime glasses were measured in a twin calorimeter operating on the differential principle. The dissolutions were effected in a 20.6% hydrofluoric-hydrochloric acid mixture. All parts of the calorimeter which come in contact with this acid were made of plastic (Trovidur) instead of the usual noble metal. From the measured heats of solution we calculated both the heats of devitrification and the heats of formation of the above mentioned silicates, also the heat effects of their formation from the starting materials soda, limestone and quartz. The latter values were found to be in good agreement with the values obtained according to a new direct calorimetric method. (Author)

Kruithof, A. M.
STRESS PHENOMENA IN GLASS-TO-GLASS AND GLASS-TO-METAL SEALS (Spanningsverschijnselen bij Glas-Glas en Glas-Metaal Verbindingen). [1962] [34]p. (foreign text included) 9 refs.
Order from SLA $3.60 62-18122

Trans. of Nederlands Tijdschrift voor Natuurkunde, 1958, v. 24, no. 12, p. 301-314.

DESCRIPTORS: *Glass seals, Dilatometers, *Glass, Temperature, *Refractive properties, Metal, *Elasticity, *Thermal stresses, Relaxation time, Seals (Stoppers)

The possibility to produce glass-to-glass and glass-to-metal seals is brought about first of all due to the fact that these materials show differences in their contraction, as it arises when these materials are first heated, and are then cooled down. By measuring the coefficient of expansion with a dilatometer, one only gets incomplete information. In the glass namely occur in addition phenomena of structure relaxation and delayed elastic effects. Both these effects are described, and their significance for the stress phenomena are explained. (Author)

Long, Bernard.
METHOD OF CLEAVING SHEETS OF GLASS AND NEW PRODUCTS RESULTING THEREFROM. [1962] 10p. (figs. omitted).
Order from OTS or SLA $1.10 62-18127

Trans. of French patent 1,162,232, gr. 3, cl. 3, filed Oct 12 56, issued 8 Apr 58, pub. 10 Sep 58.

DESCRIPTORS: *Glass, Sheets, Optical analysis, Refractive properties, Separation, Manufacturing methods.

Plumat, E.
FORMATION OF SULFUR BUBBLES IN COMMERCIAL GLASS (Formation de Bulles Contenant du Soufre dans des Verres Commerciaux). [1962] [13]p. (foreign text included) 3 refs.
Order from SLA $1.60 62-10939

Trans. of French language article from an unidentified source, n.d.

DESCRIPTORS: *Glass, *Bubbles, *Sulfur, Gases, Melting, Fused materials, Chemical reactions, Heat of formation.

Riedel, Leopold.
METHODS FOR TESTING HOMOGENEITY OF MIXTURES (Verfahren zur Prüfung der Homogenität von Gemengen). Paper [presented at] annual meeting of Hüttentechnische Vereinigung der Deutschen Glasindustrie, Bad Neuenahr, 12 Oct 56. [1962] [10]p. (foreign text included) 10 refs.
Order from SLA $1.10 62-18134

Trans. of Glastechnische Berichte (West Germany) 1957, v. 30, no. 4, p. 113-115.

DESCRIPTORS: *Glass, *Mixtures, Distribution, Test methods.

Methods of testing homogeneity of mixtures, especially with cullet, are discussed, and ways of further separating the portions insoluble in water and acid are illustrated. (Author)

Ruess, Gerhard.
RAMAN-SPECTRUM AND GLASS STRUCTURE (Raman-Spektrum und Glasstruktur). [1962] [15]p. 19 refs.
Order from SLA $1.60 62-18135

Trans. of Glastechnische Berichte (West Germany) 1949, v. 22, no. 9/10, p. 173-177.

DESCRIPTORS: *Glass, Structural properties, Analysis, *Raman spectroscopy.

Sawamoto, Tsuneo and Waki, Masanori.
STUDY ON ELECTRO-CAST REFRACTORIES OF TERNARY SYSTEM ZrO_2-Al_2O_3-SiO_2, PT. 1. [1962] [26]p. (foreign text included) 12 refs.
Order from SLA $2.60 62-18204

Trans. of Asahi [Garasu Kenkyu Hokoku] (Japan) 1953, v. 3, no. 1, p. 34-43.

DESCRIPTORS: *Refractory materials, *Casting, Oxides, Zirconium compounds, Aluminum compounds, Dioxides, Silicon compounds.

Cast blocks in composition range close to binary system ZrO_2-Al_2O_3, viz. less than 20% SiO_2, were made and their microstructure and physical properties were determined. Their resistivity against soda-lime-silica glass was tested to obtain satisfactory composition. These cast blocks possessed dense structure of eutectic type composed of baddeleyite (ZrO_2) and corundum (Al_2O_3), and interstitial mullite came into existence as SiO_2 content increased. Relation between such structure and chemical and physical properties was considered. Thermal expansion curves of these blocks presented remarkable anomalies due to transformation of ZrO_2, but because of glassy phase in the blocks, no harmful effect was seen. The result of comparative corrosion test by dipping rod-form specimens into soda-lime-silica glass revealed that they had higher resistivity than corhart black, and particularly those close to eutectoid of ZrO_2 and Al_2O_3 were excellent. (Author)

Schwiete, H. E. and Wagner, H.
SPECIFIC HEAT OF BOTTLE GLASSES (Spezifische Wärme von Flaschengläsern). [1962] [15]p. (foreign text included) 11 refs.
Order from SLA $1.60 62-18138

Trans. of Glastechnische Berichte (Germany) 1932, v. 10, no. 1, p. 26-30.

DESCRIPTORS: *Glass, *Specific heat, Determination, Test equipment, Calorimeters.

The relation between true and mean specific heats is discussed. An apparatus for the measurement of mean specific heats is briefly described. The mean specific heat of three bottle glasses is determined from 300 deg to 1300 deg. (Author)

Shapiro, I. E.
CONCERNING THE PRODUCTION OF A THIN MATTED SURFACE AT THE GRINDING OF GLASS. [1962] 9p. 1 ref.
Order from OTS or SLA $1.10 62-16520

Trans. of Russian language article from unidentified source, n.d.

DESCRIPTORS: *Glass, Grinders, Corundum, Acrylic resins, Polymers, Sheets, Abrasion, Industrial equipment, Surfaces, Erosion, Production.

Smekal, Adolf.
INFRARED AND RAMAN SPECTRA OF OXIDE GLASSES. [A comment on] Raman-Spectrum and Glass Structure, by Gerhard Ruess. [1962] 5p. 12 refs.
Order from SLA $1.10 62-18136

Trans. of Glastechnische Berichte (West Germany) 1949 [v. 22] no. 9/10, p. 177-179 (original article pub. on p. 173-177).

DESCRIPTORS: *Glass, Oxides, Structural properties, Analysis, *Raman spectroscopy, *Infrared spectroscopy.

Steinhoff, Eduard.
INVESTIGATIONS ON THE CAUSES OF THE DESTRUCTION OF CHAMBER CHECKER BRICKS IN GLASSMELTING FURNACES (Untersuchungen über die Ursachen der Zerstörung von Kammergittersteinen in Glasschmelzöfen). [1962] [31]p. (foreign text included) 6 refs.
Order from SLA $3.60 62-18207

Trans. of Glastechnische Berichte (West Germany) 1955 [v. 28] no. 7, p. 265-272.

DESCRIPTORS: *Glass, *Melting, Combustion chamber liners, Brick, Magnesite, Refractory materials.

Wargin, W. W. and Karapetjan, G. O.
ABSORPTION SPECTRA AND LUMINESCENCE OF Ce-CONTAINING GLASSES. 13p. (11 figs. omitted) 22 refs.
Order from SLA $1.60 62-14243

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1959, v. 32, no. 11, p. 443-450.

DESCRIPTORS: *Glass, *Luminescence, Spectrographic analysis, *Phosphorescent materials, *Cerium, Phosphates, Silicates, Borates, Crystals, *Absorption spectra.

The influence of glass composition, melting conditions and Ce-concentration on the absorption spectra, fluorescence and phosphorescence of Ce-glasses was studied. Specially pure raw materials were used in the batch. The absorption was measured on test pieces 0.1-0.5 mm thick and the results calculated for 1 mm thickness. The luminescence spectra were determined in a special photo-electric apparatus. The quantum yield was determined with the aid of a light-sphere. The phosphorescence spectrum was photographed with the aid of a spark phosphoroscope. (Author)

Fuels, Lubricants, and Hydraulic Fluids

Demchenko, V. S., Morozov, G. A. and others.
THE EVALUATION OF THE LACQUER-FORMING TENDENCIES OF LUBRICATING OILS, tr. by Lionel Mote. [1962] [14]p. 5 refs. TRC Trans. no. 1058; [DSIR] NLL M. 4787.
Order from OTS or SLA $1.60 62-24857

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1960 [v. 5] no. 8, p. 53-58.

DESCRIPTORS: *Lubrication, *Oils, Internal combustion engines, Test equipment, Varnishes, Additives, Disks, Rotation, Stability, Pistons.

It is shown that when investigating the tendency of lubricating oils to lacquer-formation in the Kyuregyan apparatus, very good reproduction is obtained of the working conditions of the oil in the cylinder-piston zone of internal combustion engines, and results are obtained in satisfactorily good approximation to those given by engine tests. When using the Kyuregyan apparatus, it is no longer necessary to extract the oxidation products of the oil or to make so many weighings, as are required when using the Papok apparatus. The time required to determine the quality of an oil is accordingly much reduced. It is possible to assess the mechanism of action of additives, which reduce the tendency of an oil to lacquer-formation, according to the variations, during the test, of the angle of rotation of the loaded disk in the Kyuregyan apparatus. (Author)

Sax, Karl J. and Saari, Walfred S.
MIXTURE OF POLYPHENYL ETHERS. [1962] 13p.
Order from OTS or SLA $1.60 62-14768

Trans. of description of Belgian patent application 573,694 by N. V. De Bataafshe Petroleum Maatschappij, 8 Dec 58 (priority U. S. appl. 701,296 filed 12-9-57).

DESCRIPTORS: *Lubricants, Polymers, *Phenyl ethers, Mixtures.

Slovetskii, V. I., Shevelev, S. A. and others.
THE DESTRUCTIVE ACTION OF LIGHT ON NITROALKANES. 23 Apr 62, 2p. AID Rept. 62-53; AD-276 172.
Order from OTS or SLA $1.10 62-25155

Abstract trans. of #Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1962, no. 2, p. 359-360.

DESCRIPTORS: *Liquid rocket propellants, Decomposition, *Nitrogen compounds, Photolysis, *Aliphatic compounds, *Methanes, *Ethanes, *Propanes, Hazards, Stability, Photochemical reactions, Ultraviolet radiation, Absorption, Organic compounds, Nitro radicals, Storage.

Study of the spectra of nitro compounds showed that daylight has a destructive effect on nitroalkanes and their salts in aqueous solutions. Data indicated that the closer the wavelength of the incident light to the absorption maximum of the anion of the nitroalkane, the more intense the decomposition effect. The K salts of dinitromethane, 1,1-dinitroethane, and 1,1-dinitropropane were almost completely decomposed as the wavelength of the incident light approached their absorption maximum. This article suggests that new precautionary measures may be necessary in handling this class of liquid propellants. (Author)

Leather and Textiles

Okada, A., Ishizuka, O. and others.
STUDIES ON THE POLYAZINE-FIBERS, THE NEW POLYAMIDE-FIBERS WITH PYRIDINE RINGS IN THE MAIN CHAIN. VII. PROPERTIES OF THE POLYMER AND FIBERS. [1962] 12p. (11 figs. 10 tables omitted).
Order from SLA $1.60 62-14020

Trans. of Sen'i Kogyo Shikensho Iho (Japan) 1960, no. 53, p. 1-8.

DESCRIPTORS: *Polymers, *Fibers, Molecular structure, *Synthetic fibers, *Pyridines, *Triazines, *Amides, Mechanical properties, Elasticity, Tensile properties, Stability, Heat of fusion, Solubility, Viscosity, Density Temperature.

Perepelkin, K. V.
RAPID METHOD OF ESTIMATING THE RESIDUAL AIR CONTENT OF SPINNING SOLUTIONS OF LOW VAPOUR PRESSURE (Ekspress-Metod Kontrolya Stepeni Obezvozdushivaniya Viskozy i Drugikh Pryadil'nykh Rastvorov s Nizkoi Uprugost'yu Para). July 62 [9]p. 14 refs. RTS 2074.
Order from OTS or SLA $1.10 62-32477

and other liquids of low vapour pressure. The method provides a rapid means of measuring residual air contents of spinning solutions under laboratory or plant conditions. (Author)

Shevchenko, A. S., Konkin, A. A., and Serkov, A. T.
EFFECT OF POLYETHYLENE GLYCOLS ON VISCOSE FIBER FORMATION (Vliyanie Poliztilenglikolei na Protsess Formovaniya Viskoznogo Volokna). 16 Oct 61 [15]p. 20 refs.
Order from OTS or SLA $1.60 62-14257

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 2, p. 29-33.

DESCRIPTORS: *Synthetic fibers, Rayon fibers, *Cellulose, Xanthic acids, Gels, Viscosity, *Glycols, *Ethylenes.

The possibility of using polyethylene glycols with differing degrees of polymerization (5 to 68 rkm) as modifiers during viscose fiber formation was investigated. It was shown that, by increasing the degree of polymerization of polyethylene glycol, the rate of xanxanthate decomposition and the rate of neutralization of cellulose xanthate gel slow down, the structural homogeneity of the fiber increases, its swelling in water decreases and the resistance to hydrolysis varies. The presence of polyethylene glycol slows down the rate of diffusion of hydrogen ions and accelerates the diffusion of zinc ions through the cellulose hydrate film. The rate of viscose flow under constant hydrodynamic conditions decreases in the presence of polyethylene glycol. (Author)

Takahashi, Koshitami, Koshimura, Masamitsu and others.
RELATIONSHIP BETWEEN CHEMICAL STRUCTURE OF CATIONIC SURFACE-ACTIVE AGENTS AND FRICTIONAL COEFFICIENT IN THE CASE OF TERYLENE FIBERS (ON ALIPHATIC LONG-CHAINED AMINE SALTS). Rept. no. 1 of the Studies on the Frictional Coefficient of Textile Oil (Finishing) Agents. [1962] [17]p. 3 refs.
Order from SLA $1.60 62-14301

Trans. of Textile Machinery Society [of Japan]. Journal 1960, v. 13, no. 6, p. 435-440.
Another trans. is available from RIS $25.00 as RIS C-144 [1961] 12p.

DESCRIPTORS: *Synthetic fibers, *Amines, Salts, Phthalic acids, *Finishes, *Oils, Friction, Surface-active substances.

Takizawa, Akira.
DIFFUSION PHENOMENA IN WET-SPINNING OF VISCOSE FIBER. DIFFUSION-CONTROLLED REACTION. Rept. 4 of Studies in the Wet-Spinning of Artificial Fibers. [1962] [20]p. 12 refs.
Order from SLA $1.60 62-14267

Trans. of Sen-i Gakkaishi (Japan), v. 16, no. 11, p. 955-961.

DESCRIPTORS: Fibers, *Cellulose, *Viscose, Processing, Diffusion, Theory, Sulfuric acid, Sodium compounds, Hydroxides, Sulfates, Reaction kinetics.

Regenerating reaction of cellulose xanthate in wet spinning of viscose fiber is an example of "diffusion-controlled reaction" in high polymeric substances. In this report, theoretical considerations for the reaction controlled by mutual diffusion is undertaken, and resulting calculation is performed. The theory is applied to the experimental results on the regenerating reaction in cellulose xanthate filaments, and the following conclusion is obtained. To the regenerating reaction, the equation of the second order reaction controlled by mutual diffusion of H_2SO_4-NaOH system is applied. If H_2SO_4 concentration is increased, velocity constant decreases with the activity coefficient of H_2SO_4 solution. Furthermore, the velocity constant is increased by temperature rising, and the activation energy is 12.8 K cal./mol. Velocity constant is not influenced by change of filament diameters. The action of Na_2SO_4 is not only to decrease the diffusion coefficient, but also to decrease the reaction velocity. (Author)

Photographic Materials

Pettinaroli, Luigi.
PROCEDURE FOR THE REALIZATION OF PHOTOGRAPHIC IMAGES WITH SEVERAL COLORS OBTAINED FROM A NORMAL BLACK AND WHITE PHOTOGRAPH BASED ON SILVER BROMIDE. [1962] 5p.
Order from SLA $1.10 62-14030

Trans. of letter of the author, Milan, 14 May 58.

DESCRIPTORS: *Bromides, *Silver compounds, *Color photography, Photographic chemicals, *Colorimetry, Photographic equipment, *Optical images.

Letter concerning a procedure for the realization of photographic images with several colors obtained from a normal black and white photograph based on silver bromide.

Tomoda, Yoshitada.
PHOTOGRAPHIC LATENSIFICATION BY THALLIUM NITRATE. [1962] 9p. (figs. tables omitted) 11 refs.
Order from SLA $1.10 62-16458

Trans. of Tokyo Kogyo Shikensho Hokoku (Japan) 1958, v. 53, no. 12, p. 429-432.

DESCRIPTORS: *Photographic film, Processing, *Photographic images, Images, Intensity, *Photographic chemicals, Thallium compounds, Nitrates.

In experiments the effects of the latensification were reflected to a greater extent when the developing time is shorter. This is probably a characteristics of the latensification by a solution of metal salts. The effects of the latensification are decreased when the developing time is prolonged, in the case of latensification by metal salts. The reason lies in the fact that the latent image on the surface of halogen silver particles is mainly intensified, and, as a result, th-e effects of the latensification take place more strongly at the initial period of the development when the surface development contributes more.

Plastics

Conix, Andre Jan and Laridon, Urbain Leopold.
THERMOPLASTIC LINEAR POLYSULFONATES. [1962] 16p.
Order from OTS or SLA $1.60 62-16356

Trans. of Belgian patent 598,860 by Gevaert Photo-products, Ltd., Belgium, publ. 6 Jan 61 (priority: England, 6 Jan 60, no. 543/60).

DESCRIPTORS: *Thermoplastics, Polymers, *Sulfonates, Preparation, Plastic films, *Photographic film.

Horn, O. and Starck, W.
FLUORINE PLASTICS, tr. by Bertha P. Klenova. 24 Nov 52 [7]p. 8 refs. TVA 3141.
Order from OTS or SLA $1.10 62-25806

Trans. of Angew[andte] Chem[ie] (West Germany) 1952, v. 64, p. 533-536.

DESCRIPTORS: *Plastics, *Fluorocarbons, Fluorine compounds, Polymerization, Ethylenes, Physical properties.

The exceptionally stable fluorine-carbon bond explains the high chemical stability of fluorocarbon polymers. The manufacture of polytetrafluoroethylene and polytrifluoromonochloroethylene (Hostaflon) has become particularly important from the industrial standpoint. The polymerization of tetrafluoroethylene and trifluorochloroethylene is possible under pressure and in the absence of oxygen by means of peroxide catalysis. (Author)

Kohlwey, J. F.
POLYAMIDE PROCESSING ON THE EXTRUDING PRESS (Polyamid-Veratbeitung auf der Strangpresse). [1962] [12]p. (foreign text included) 3 refs.
Order from SLA $1.60 62-18195

Trans. of Kunststoffe (West Germany) 1954, v. 44, no. 1, p. 3-5.

DESCRIPTORS: *Polyamide plastics, Processing, Extrusion, Material forming

Leibnitz, E., Könnecke, H.-G., and Gawalek, G.
ON THE POLYMERIZATION OF ETHYLENEIMINE. [1961] 6p. (2 figs. 4 tables omitted).
Order from SLA $1.10 62-14213

Trans. of J[ournal für] Prakt[ische] Chem[ie] (East Germany) 1958 [ser. 4, v. 6, no. 5/6] p. 289-298.

DESCRIPTORS: *Polyethylene plastics, Ethylenes, *Imines, Polymerization, Catalysts, Hydrochloric acid, Molecular weight.

Polymerization experiments with ethyleneimine show that, using hydrogen chloride as catalyst, the reaction rate increases with increasing proton concentration, and the median molecular weight of the polymer obtained decreases. With increasing ethyleneimine concentration the rate of polymerization increases, but this sometimes leads to a powerful explosion when the imine exceeds 50 weight percent in the solution. Under the same conditions polymerizations with different acids as catalyst showed no clear relationship between molecular weight and hydrogen ion concentration of the acid used. Based on nitrogen determinations it is concluded that there is some branching in the polyethyleneimine. (Author)

Petukhov, B. V. and Terekhova, G. M.
EFFECT OF POLYESTERIFICATION CATALYSTS ON SECONDARY PROCESSES DURING THE SYNTHESIS OF LAVSAN. [1962] 9p. 13 refs.
Order from OTS or SLA $1.10 62-14895

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 5, p. 24-27.

DESCRIPTORS: *Polyethylene plastics, *Phthalates, Synthesis, Esterification, Catalysts, Zinc compounds, Manganese compounds, Cobalt catalysts, Ethylenes, Glycols, Dehydration, Pyrolysis, Oxidation, Melting, Colors.

In choosing a catalyst for the synthesis of polyethylene terephthalate (PET), it is important to consider the degree of thermodestructive processes which are caused by the catalysts. Various catalysts of polyesterification bring about, to a different degree, the dehydration of ethylene glycol, the thermal destruction of dimethyl terephthalate, the thermo-oxidizing destruction of the polymer, and they also influence the melting point of the polymer and its color. Of the catalysts used generally, zinc acetate is the least successful; better catalysts are compounds of manganese and cobalt. (Author)

Ratner, S. B.
MECHANISM OF ABRASION OF POLYMERS AND THE CRITERION OF SIMILARITY (Mekhanizm Istiraniya Polimerov i Kriterii Podobiya) tr. by G. L. Cairns. Jan 62 [5]p. 5 refs. Library Communication no. 1093.
Order from LC or SLA $1.10 62-32677

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 135, no. 2, p. 294-297.

DESCRIPTORS: *Polymers, *Abrasion, Elasticity, Friction, Plastics, Theory.

Takahashi, Masao.
SOLUTION TEMPERATURE OF VARIOUS MIXED SOLVENTS TOWARD ACRYLONITRILE POLYMER. Rept. no. 37 of studies on Acrylic Fiber. [1962] 10p. 20 refs.
Order from SLA $1.10 62-14965

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 6, p. 1134-1136.

DESCRIPTIONS: Polymers, *Acrylonitriles, Organic solvents, Mixtures, *Methanes, Nitro radicals, *Formamides, Methyl radicals, Nitriles, Maleic anhydride, Succinic anhydrides, Pyrolidinone, Sulfoxides, DNP, Nitrophenols, Acetones.

Polymer solutions which are stable at normal temperature are formed by the addition of about 20 vol% of malononitrile or dimethyl sulfoxide to nitromethane. Compounds which demonstrate some slight interaction with the polymer even when alone (maleic anhydride, succinic anhydride), compounds, with large polarity (pyrogallol, dinitrophenol, nitrophenol), diamines, and dioxanes demonstrate dissolving power in compositions of up to equal-volume mixtures with dimethyl formamide. A number of mixed systems were also investigated for γ-butyrolactone, malononitrile, and formamide. (Author)

Urazaev, Z. F., Baranov, B. M. and others.
PRODUCTION ADAPTABILITY OF PLASTIC PRODUCTS RTM-814. 29 Oct 62 [90]p. 19 refs. FTD-TT-62-249.
Order from OTS $2.25 63-11523

Unedited rough draft trans. of mono. Tekhnologichnost' Konstruktsii Izdelii iz Plastmass. RTM-814, pub. by Ministerstvo Aviatsionnoi Promyshlennosti SSSR, 1957, 98p.

DESCRIPTORS: *Plastics, Manufacturing methods, Production, Design, Classification, *Material forming, Molding, Machining, Reinforcing materials, Dies.

Purpose and scope of the RTM
General information concerning plastic materials
Basic types of plastic materials
Specifications for the design of components fabricated by pressforming in metal molds
Basic ways to prevent warping of plastic articles
Shaping elements of components
The reinforcement of plastic products
Machining of plastic products
Joining plastic components
Precision of the dimensions of plastic components fabricated in metal forms
Appendix 1. Factors causing scattering of plastic component dimensions and the method of determining the complete range of dimension scattering
Appendix 2. Method of determining the effective dimensions of the threading cores of pressforms for pressing plastic components.

Wood and Paper

Bresciani, Andrea.
APPARATUS FOR PRODUCING AN APPARENTLY SPONTANEOUS ROLLING AND UNROLLING OF SHEETS OF PAPER, PARCHMENT, AND THE LIKE PARTICULARLY FOR ADVERTISING PURPOSES, tr. by F. H. B. 24 Sep 62 (figs. omitted).
Order from OTS or SLA $1.10 62-33234

Trans. of Italian patent 504, 291, cl. XXV, appl. 24 Aug 53, granted 10 Dec 54, printed July 56.

DESCRIPTORS: *Paper, *Sheets, Production, *Magneto-optic rotation, Electric motors, Transmission gears, Electromagnetic drives, Design.

Rozenberger, N. A. and Naumov, V. V.
BASIC TRENDS IN THE PRODUCTION DEVELOPMENT OF SEMI-FINISHED FIBROUS PRODUCTS. [1962] 11p.
Order from OTS or SLA $1.60 62-16074

Trans. of Bumazhnaya Promyshlennost' (USSR) 1961 [v. 36] no. 9, p. 4-7.

DESCRIPTORS: Fibers, *Paper industry, *Wood pulp, *Cellulose, Paper, Manufacturing methods, Industrial production.

Speth, Ernest.
COATED PAPERS IN LITHOGRAPHY. 1955, 6p.
Order from SLA $1.10 62-16750

Trans. of Fachhefte F[ür] d[ie] Chemigraphie, Lithographie u[nd] d[en] Tiefdruck (Switzerland) 1954, p. 143-149.

DESCRIPTORS: *Lithography, *Paper, Printing, *Coatings, Chemical reactions, Enamel coatings, Varnishes, Colors.

MATHEMATICS

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 11 (PHYSICS AND MATHEMATICS SERIES). 26 Nov 62 [20]p. JPRS: 16326.
Order from OTS or SLA $1.60 63-13299

DESCRIPTORS: *Abstracts, Literature, *Hungary, *Poland, *Physics, *Mathematics, Applied mathematics, *Astronomy.

Consists of abstracts of articles from the East European scientific and technical journals of Hungary and Poland.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 16 (PHYSICS, MATHEMATICS AND CHEMISTRY SERIES). 5 Dec 62 [30]p. JPRS: 16524.
Order from OTS or SLA $2.60 63-13271

DESCRIPTORS: *Abstracts, Literature, *East Germany, *Rumania, *Physics, *Mathematics, *Chemistry, *Nuclear physics.

Consists of abstracts of articles from the East European scientific and technical journals of East Germany and Rumania.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 19 (PHYSICS AND MATHEMATICS SERIES). 6 Dec 62 [14]p. JPRS: 16550.
Order from OTS or SLA $1.60 63-13514

Consists of abstracts of articles from the East European scientific and technical journals of Czechoslovakia and East Germany.

DESCRIPTORS: *Abstracts, Literature, *Czechoslovakia, *East Germany, *Mathematics, *Applied mathematics, *Nuclear physics, Physics, Elastomers, Ionization chambers, Formic acid, Lead, Autoradiography, Steel, Electromagnetic waves, Cylindrical bodies, Electrical networks.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 26 (PHYSICS AND MATHEMATICS SERIES). 20 Dec 62 [18]p.
JPRS: 16781.
Order from OTS or SLA $1.60 63-13458

Consists of abstracts of articles from the East Europea scientific and technical journals of Czechoslovakia, East Germany, and Hungary.

DESCRIPTORS: *Abstracts, Literature, *Czechoslovakia, *East Germany, *Hungary, *Physics, *Mathematics, *Nuclear energy, Nuclear physics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 37 (PHYSICS AND MATHEMATICS SERIES). 31 Dec 62 [34]p.
JPRS: 16922.
Order from OTS or SLA $3.60 63-13670

Consists of abstracts of articles from the East European scientific and technical journals of Bulgaria, East Germany, Hungary, and Poland.

DESCRIPTORS: *Abstracts, Literature, *Bulgaria, *East Germany, *Hungary, *Poland, *Physics, *Mathematics, *Nucleonics

Eidel'man, S. B.
ON FUNDAMENTAL SOLUTIONS OF PARABOLIC SYSTEMS. [1962] [73]p. 18 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R53. When supply is exhausted, order from OTS or SLA $7.60, 62-18860

Trans. of Matematicheskii Sbornik (USSR) 1956, v. 38(80) no. 1, p. 51-92.

DESCRIPTORS: *Partial differential equations, Green's function, Functions, Complex variables, Matrix algebra, Determinants.

This study is devoted to (1) an analytic description of Green's matrix; (2) to the construction of a fundamental matrix of solutions of system in the case of the strip $\Pi(0 \leqslant t \leqslant T; -\infty < X_s < \infty; s = 1, 2, \ldots, n)$, its application to the solution of the Cauchy problem, and an investigation of some properties of regular solutions of parabolic systems; (3) to the investigation of fundamental matrices in a region complex with respect to one of the spatial coordinates, in the assumption of analyticity of the coefficients of the system with respect to this coordinate; (4) to the extension of well-known theorems concerning the analyticity of solutions of parabolic systems with coefficients depending on t to solutions of systems with coefficients depending on x and t, which are analytic functions of x; (5) to the construction of fundamental matrices in finite regions and the establishment by means of them of theorems concerning the analyticity of solutions with certain assumptions concerning the coefficients of the system.

Eidel'man, S. D.
FUNDAMENTAL MATRICES OF SOLUTION OF GENERAL PARABOLIC SYSTEMS. [1962] [9]p. 4 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R34. When supply is exhausted, order from OTS or SLA $1.10, 62-18850.

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 5, p. 980-983.

DESCRIPTORS: *Partial differential equations, Functions, Complex variables, Integral equations, Matrix algebra, Inequalities.

In this paper fundamental matrices of solutions are constructed for arbitrary linear parabolic systems and some of their applications are given.

Kantorovich, L. V.
SEVERAL NEW APPROACHES TO CALCULATING METHODS AND TREATMENT OF OBSERVATIONS. 20 Dec 62 [13]p. JPRS: 16783.
Order from OTS or SLA $1.60 63-13456

Trans. of Sibirskii Matematicheskii Zhurnal (USSR) 1962, v. 3, no. 5, p. 701-709.

DESCRIPTORS: *Numerical methods and procedures, Data, Processing, Digital computers, Mathematics, Applied mathematics.

Kurochkin, V.
PRESS INTERVIEW WITH SOVIET MAKERS OF MEMORY DEVICE. 13 Dec 62 [10]p. JPRS: 16666.
Order from OTS or SLA $1.10 63-13535

Trans. from Literaturnaya Gazeta (USSR) 1962, no. 131, 1 Nov.

DESCRIPTORS: *Engineering personnel, Personnel, *Computer storage devices, Design.

The engineers interviewed included Andrey Vasil'yevich, Igor Vital'yevich, and Oleg Aleksandrovich.

Lapteva, D. G.
ON THE PROJECTIVE TRANSFORMATION OF A NOMOGRAM FROM FIXED POINTS WITH A STRAIGHT-LINE ANSWER SCALE (O Proektivnom Preobrazovanii Nomogramm iz Vyravnennykh Tochek s Pryamolineinoi Otvetnoi Shkaloi) tr. by C. J. Tee. [1962] [16]p. 5 refs. NLL M. 3581.
Order from OTS or SLA $1.60 62-24663

Trans. of Vychislitel'naya Matematika (USSR) 1959, no. 4, p. 150-158.

DESCRIPTORS: *Nomographs, *Transformations (Mathematics), Projective geometry.

Lode, W.
GRAPHIC METHOD FOR THE AVERAGING OF REPEATED MEASUREMENTS. 18 Feb 49, 4p. (figs. refs. omitted).
Order from SLA $1.10 62-18434

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[ei]ts[chrift] (West Germany) 1948, v. 90, no. 3, p. 89-90.

DESCRIPTORS: Measurement, Mathematical analysis, *Statistical tests, Geometry, Error.

Vishik, M. I. and Lyusternik, L. A.
ON THE ASYMPTOTICS OF SOLUTIONS OF PROBLEMS WITH RAPIDLY OSCILLATING BOUNDARY CONDITIONS, FOR EQUATIONS WITH PARTIAL DERIVATIVES. [1962] 7p. 3 refs.
Order from OTS or SLA $1.10 62-14831

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 119, no. 4, p. 636-639.

DESCRIPTORS: *Partial differential equations, Numerical analysis, *Series, Fourier analysis.

The asymptotics are investigated of solutions of the first boundary value problem for arbitrary elliptic equations with rapidly oscillating boundary conditions.

MECHANICS

Bolotin, V. V.
STATISTICAL METHODS IN THE NONLINEAR THEORY OF ELASTIC SHELLS (Statisticheskie Metody v Nelinenoi Teorii Uprugikh Obolochek). Dec 62, 16p. 8 refs. NASA Technical trans. F-85.
Order from OTS $0.50 63-11525

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1958, no. 3, p. 33-[41]. Another trans. is available from OTS or SLA $1.60 as 62-16026 [1962] [20]p.

DESCRIPTORS: *Elastic shells, Creep, Load distribution, Deformation, Stability, *Probability, Statistical analysis.

A statistical method is presented for calculation of the mathematical expectation and dispersion of buckling loads of an arbitrary shell characterized by a finite number of parameters defining not only the loads but also initial deformations, defects in manufacture, and so forth. The method should be useful in design calculations and in interpreting experimental data for the buckling of elastic shells. Calculated values for a shallow cylindrical panel are in good agreement with the mean value of experimentally determined critical forces. (NASA Abstract)

Brillouin, J.
ANTI-VIBRATION FOUNDATIONS FOR MACHINE TOOLS. [1962] 17p. (figs. formulae refs. omitted).
Order from SLA $1.60 62-18148

Trans. of [Revue Generale de Mécanique] (France) 1948 [v. 32] July, p. 227-234.

DESCRIPTORS: *Machine tools, *Foundations (Structures), *Vibration isolators, Vibration, Reduction, *Noise, Personnel, Fatigue (Physiology), *Vibration mechanisms, Industrial plants.

Budnyatskii, I. M. and Lunts, Ya. L.
THE MOTION OF A GYROSCOPE MOUNTED ON A VIBRATING PLATFORM WITH ITS ROTOR NOT PRECISELY SET ON THE SHAFT. 24 Apr 62 [14]p. 9 refs. FTD-TT-62-633.
Order from OTS or SLA $1.60 62-32299

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1961, v. 4, no. 6, p. 78-86.

DESCRIPTORS: *Gyroscopes, Motion, Equations of motion, Inertia, Vibration, Gimbals, Dynamics.

A study is made of the motion of a free dynamically unbalanced gyroscope mounted on a vibrating base. Formulas are obtained for the systematic drift of the gyroscope. (Author)

Grobov, V. A.
NONSTEADY-STATE OSCILLATIONS OF NONLINEAR SYSTEMS WITH GYROSCOPIC MEMBERS TAKING INTO ACCOUNT COUPLING TO A LOW-POWER SOURCE. 28 June 62 [7]p. 6 refs. FTD-TT-62-472; AD-283 903.
Order from OTS or SLA $1.10 62-32685

Unedited rough draft trans. of Ukrainskii Matematicheskii Zhurnal (USSR) 1961, v. 13, no. 2, p. 220-223.

DESCRIPTORS: *Nonlinear systems, *Oscillation, Gyroscopes, Inertia, Rotation, Numerical analysis, Equations of motion.

We present an approximate method for investigating nonsteady-state oscillations in a non linear system with gyroscopic members taking into consideration coupling to a low-power source. This method does not require the transformation of equations of motion into quasi-normal coordinates. (Author)

Kosterin, S. I.
STRUCTURE OF THE FLOW OF A TWO-PHASE MEDIUM IN HORIZONTAL TUBES. [1962] 3p. 7 refs.
Order from OTS or SLA $1.10 62-16795

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1943, no. 7, p. 37-45.

DESCRIPTORS: *Fluid flow, Gases, Air, Bubbles, Liquids, Water, Pipes.

Litvin-Sedoi, M. Z.
A GYROSCOPIC LINEAR ACCELEROMETER. 31 May 62 [15]p. 10 refs. FTD-TT-62-486.
Order from OTS or SLA $1.60 62-32295

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 2, p. 55-60.

DESCRIPTORS: *Gyroscopes, Linear systems, *Accelerometers, Dynamics, Gimbals, Gravity, Inertia, Acceleration, Rotation, Equations of motion.

Malyshev, B. M.
PLASTIC FLOW DURING SIMULTANEOUS CONTINUOUS STRETCHING AND TORSION WHERE THE TORSIONAL MOMENTS ARE LIGHT. 28 Aug 62 [22]p. 2 refs. FTD-TT-62-605; AD 286 597
Order from OTS or SLA $2.60 62-33649

Unedited rough draft trans. of Moscow U. Vestnik. Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii (USSR) 1958 [v. 13] no. 1, p. 55-68.

DESCRIPTORS: *Plastic flow, Deformation, Stresses, Torque, Elasticity, Solids, Rods, Aluminum tubing, Copper tubing, Steel tubing, Brass tubing, Tests, Plasticity, Tensor analysis.

Shermergov, T. D.
ON A THERMODYNAMIC DESCRIPTION OF NON-EQUILIBRIUM PROCESSES. [1959] 5p. 7 refs. MDF S-145.
Order from OTS $0.50 62-11341

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Fiz[iko]-matem[aticheskie] Nauki (USSR) 1958, no. 5, p. 147-150.

DESCRIPTORS: *Thermodynamics, *Elasticity, Deformation, Matrix algebra.

A relationship that exists between the strain and deformation of elastic bodies is discussed. The usual relaxation relations $A = \bar{A} + \langle \phi , a \rangle$ are shown to result from the phenomenological relation between the forces X_i and the flows $J_i = \cdot L_{ik} X_k$, where summation is over subscripts encountered twice. Here $\bar{A}$ denotes the equilibrium value of the column matrix A, ϕ is the heredity function, a is a known function of time, and the angular brackets denote the convolution of the rectangular matrix ϕ and the column matrix a

$$\langle \phi , a \rangle \equiv \int_0^t \phi(t - \tau) a(\tau) d\tau.$$

Aerodynamics and Pneumatics

Karasev, A. B., Pirumov, U. G., and Rubtsov, V. A.
SOLUTIONS OF EQUATIONS OF BOUNDARY LAYER AT CRITICAL POINT FOR TERNARY MIXTURE [AND] CALCULATION OF AXIALLY SYMMETRIC SUPERSONIC ANNULAR NOZZLES. 10 Sep 62 [40]p. 9 refs. FTD-TT-62-494; AD-286 613.
Order from OTS or SLA $3.60 62-33530

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 6, p. 3-10 and 15-25.

DESCRIPTORS: *Hypersonic flow, *Boundary layer, Blunt bodies, Chemical reactions, Heat transfer, Diffusion, Numerical analysis, Supersonic flow, *Supersonic nozzles.

The high temperatures which generally develop in the flow region behind a detaching shock wave call for the calculation of a variety of chemical reactions which take place both within the boundary layer as well as at the solid wall. In this connection we present the numerical solutions of boundary-layer equations as they pertain to the critical point of a blunt-nosed body for the case of a ternary mixture obtained through the use of various diffusion laws. (Karasev) A calculation method is proposed for supersonic axially symmetric annular nozzles with two nondifferentiable points and a rectilinear sound line. Annular nozzles are examined, both with nondifferentiable points situated in one plane as well as with shifted nondifferentiable points. (Pirumov and Rubtsov)

Lamper, R. E.
ON THE APPLICATION OF SOME AERODYNAMIC THEORIES TO THE CALCULATION OF FLUTTER OF A PANEL. [1962] [9]p. 2 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R41. When supply is exhausted, order from OTS or SLA $1.10, 62-18852

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1960, no. 2, p. 147-149.

DESCRIPTORS: *Aerodynamic configurations, *Panels (Structural), Aerodynamics, *Flutter, Equations of motion, Fourier analysis, Series, Aeroelasticity.

In a linear formulation a three-dimensional non-steady linearized theory may be used to determine the aerodynamic forces arising on a panel during flutter, however, its practical use in the majority of cases is associated with calculation difficulties. Using the example of a plate, attempts are made to evaluate the effect on the result of the simplifications that are used on the basis of aerodynamic considerations in solving the problem of flutter. The aerodynamic evaluation may prove insufficient for problems of dynamic stability--the small quantitative, and even more, the qualitative, change of forces characterizing the non-conservatism of the system may have a substantial effect on its stability.

Makhortykh, Zh. K.
STABILITY OF A MULTISPAN PANEL MOVING IN A GAS. [1962] [10]p. 6 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R43. When supply is exhausted, order from OTS or SLA $1.10, 62-18854

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1959, no. 2, p. 174-177.

DESCRIPTORS: *Aerodynamic configurations, *Panels (Structural), Oscillation, Stability, Supersonic flight, Supersonic characteristics, Aero-elasticity, Flutter.

The problem of the oscillations of a multispan panel of finite length moving in a gas with great supersonic velocity is investigated in the linear formulation. The pressure of the gas is taken into account by the formula of piston theory. (Author)

Movchan, A. A.
BEHAVIOUR OF COMPLEX EIGENVALUES IN A PROBLEM OF PANEL FLUTTER. [1962] [11]p. 1 ref.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R49. When supply is exhausted, order from OTS or SLA $1.60, 62-18856

Trans. of Akademiya Nauk SSSR. Institut Mekhaniki. Inzhenernyi Sbornik, 1960, v. 27, p. 70-76.

DESCRIPTORS: *Aerodynamic configurations, *Panels (Structural), *Flutter, Supersonic characteristics, Numerical analysis, *Complex numbers.

In the problem of the flutter of a thin, elastic, rectangular panel, moving in a gas with great supersonic velocity, results of additional calculations are given for the region of high velocities, in which the eigenvalues of the corresponding non-self-conjugate boundary value problem become essentially complex. The results may be used in processing the results of experimental investigations of the flutter of the coverings of supersonic flying craft. (Author)

Pavlenko, G. V.
EXPERIMENTAL INVESTIGATION OF ROTATING STALL. 21 May 62, 3p. AID Rept. 62-67.
Order from OTS or SLA $1.10 62-25144

Abstract trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1962, no. 1, p. 92-104.

DESCRIPTORS: *Compressor rotors, *Axial-flow compressor blades, Rotation, Stalling, Aerodynamic data.

Stepanov, R. D.
ON THE FLUTTER OF CYLINDRICAL PANELS MOVING IN A GAS. [1962] [15]p. 3 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R44. When supply is exhausted, order from OTS or SLA $1.60, 62-18855

Trans. of Akademiya Nauk SSSR. Institut Mekhaniki. Inzhenernyi Sbornik, 1959, v. 25, p. 92-100.

DESCRIPTORS: *Aerodynamic configurations, *Panels (Structural), Cylindrical bodies, *Flutter, Supersonic characteristics, Stability, Numerical analysis, Complex numbers.

This paper gives an application of a method to the solution of the problem of the flutter of a circular cylindrical shell of hollow section, moving in a gas with supersonic velocity. It is assumed that the shell has hinged fastenings at its longitudinal and transverse bounding edges that are immovable in the planes of these edges. It is concluded that, both in calculations in the third approximation and in calculations in the second approximation, the complex eigenvalues of the curve of the problem in question fall outside the limits of the parabola of stability for velocities of flow practically coinciding with the values of the critical velocities. (Author)

Zubkov, A. I. and Sorkin, L. I.
THE EFFECT OF VISCOSITY ON THE FLOW IN THE REGION OF A STRAIGHT COMPRESSION SHOCK
2 May 62 [15]p. 2 refs. FTD-TT-62-172; AD-276 874.
Order from OTS or SLA $1.60 62-32520

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya. Mekhanika i Mashinostroenie, 1961, no. 1, p. 114-120.

DESCRIPTORS: *Boundary layer, *Compression shock, *Wind tunnels, *Viscosity, *Supersonic flow, *Subsonic flow, *Turbulent flow, Cylindrical bodies, Spark shadowgraph photography, Functions, Nozzles, Pressure, Mach number.

Investigations were conducted on the physical picture of flow in the region of a straight compression shock and the localization of the separation that occurs as a result of the interaction between a straight compression shock and the boundary layer. All the parameters for flow at the end of the deceleration phase of a supersonic flow in a closing compression shock, and the length of this sector, can be determined from the known flow parameters ahead of the shock.

METALLURGY

PROPERTIES OF MATERIALS: [SELECTED] ARTICLES. [14]p. 6 refs. JPRS: 16854.
Order from OTS or SLA $1.60 63-13636

Trans. of Mashinostroenie (USSR) 1962, no. 5, p. 32-35 and 86-87.

DESCRIPTORS: Materials, Metals, *Powder metals, *Porous metals, *Porous materials, Machining, Mechanical properties, *Silicon compounds, *Carbides, Physical properties, Chemical properties, Powder metallurgy.

Contents:
Effect of cutting parameters on the quality of the machined surface of porous powder metal materials, by A. Ya. Artamonov
Investigation of the properties of a silicon carbide-base construction material, by A. A. Alent'ev and others.

Blum, H.
THE "MITRAL" METAL PLATING PROCESS (Mitral - Metallplattierverfahren). [1962] [11]p. 4 refs.
Order from SLA $1.60 62-18185

Trans. of Metall (West Germany) 1958, v. 12, no. 9, p. 814-816.

DESCRIPTORS: *Plating, *Zinc, Powder metallurgy, *Zinc coatings, Surfaces, Adhesion.

. Braun, A.
RELATIONSHIP BETWEEN HARDNESS AND TENSILE TEST. [1962] 4p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18447

Trans. of Schwizer Archiv [für Angewandte Wissenschaft und Technik] 1954, v. 20, no. 2, p. 56-58.

DESCRIPTORS: *Hardness, *Tensile properties, Tests, *Metals, Metallurgy, Elasticity, Mathematical analysis.

Capitaine, H.
NEW TYPE OF LOW FREQUENCY INDUCTION FURNACE FOR LIGHT METALS. 4 Jan 47, 3p. (figs. omitted).
Order from SLA $1.10 62-18492

Trans. of a reprint from Metallwirtschaft [Metallwissenschaft, Metalltechnik (Germany) 1941, v. 20, no. 24.

DESCRIPTORS: *Induction heating, Low frequency, *Aluminum, Melting, *Furnaces.

Conradt, H. W., Dahl, O., and Sixtus, K.
MAGNETIC ANISOTROPISM IN ROLLED IRON-NICKEL ALLOYS (Magnetische Anisotropie in Gewalzten Eisen-Nickel-Legierungen). [1962] [23]p. 9 refs.
Order from SLA $2.60 62-18169

Trans. of Zeitschrift für Metallkunde (Germany) 1940, v. 32 [no. 7] p. 231-238.

DESCRIPTORS: *Nickel alloys, *Iron alloys, Rolling mills, Deformation, Crystal structure, Magnetic fields, Heat treatment, Elasticity, Stresses, Single crystals, Rotation, Conductivity, Magnetostriction, Magnetic properties, Intensity.

In nickel iron alloys, cold rolling leads to a strongly preferred magnetic direction in the direction of rolling. Heating, even below the initiation of recrystallization, eliminates the rolling anisotropy; in this way there was made possible a complete division of the total anisotropy into texture and rolling anisotropy. At average (moderate) degrees of deformation, the rolling anisotropy passes through a maximum value. As a function of the nickel content, it shows the highest value at about 70% Ni. Preheat treatment in the direction of super structure formation increases the rolling anisotropy. Parallel with the rolling anisotropy there is a strong directional dependency of the coercive force and decrease of the coercive force at high degrees of rolling. Increase of the resistance by cold rolling and rolling anisotropy shows the same dependency on the nickel content and on the heat treatment; on the other hand, the resistance shows a uni-directional increase as a function of the degree of rolling. (Author)

Epelboim, I. and Chalin, C.
ELECTROLYTIC POLISHING. 5 Jan 49, 2p. (figs. refs. omitted).
Order from SLA $1.10 62-18430

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1948, v. 226, no. 4, p. 324-326 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Electrolytic polishing, Electrolytic cells, Metals, Alloys, Electrolytes.

Epelboim, I. and Chalin, C.
METHOD FOR THE STUDY OF ELECTROLYTIC POLISHING. 9 May 49, 3p. (figs. refs. omitted).
Order from SLA $1.10 62-18415

Trans. of Métaux (Corrosion-Industries) (France) 1948, v. 23 [no. 269] p. 1-4.

DESCRIPTORS: *Electrolytic polishing, *Ferromagnetic materials, Electrolysis, Electrolytic cells.

Geminov, V. N. and Kop'ev, I. M.
THE STRENGTH OF FINE METALLIC THREADS. 7 Dec 62 [11]p. 4 refs. JPRS: 16567; NASA N63-10977
Order from OTS or SLA $1.60 63-13463

Trans. of [Akademiya Nauk SSSR]. Institut Metallurgii. Trudy, 1962, no. 10, p. 202-208.

DESCRIPTORS: *Metallic crystals, Single crystals, Crystals, Mechanical properties, Crystal structure, Copper.

The question is considered of the strength of fine metallic monocrystals -- whiskers.

Günther, H.
METHOD FOR THE WELDING OF LITZ-WIRE. 19 Aug 47, 9p. (figs. tables omitted).
Order from SLA $1.10 62-18394

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Elektrotechnik] (Germany) 1942, v. 63, no. 49/50, p. 587-591.

DESCRIPTORS: *Wire, *Welding, Copper wire, Electric wire, Spot welding, Arc welds, Electrical equipment, Manufacturing methods.

The method for the welding of litz-wire described above is one of a. c. butt-welding for the joining of litz wires and other current conductors having the same diameter. It works without flux, solder or any other supplementary material and requires considerably less time than the joining methods for multi-strand conductors so far known. The weld spot occupies a very limited space and has high mechanical strength, excellent electrical conductivity and resistance to corrosion. It is only 10% larger than the conductor diameter. The apparatus required for the operation is simple in structure and in manipulation and operates automatically.

Heiz, W.
SPOT WELDING OF ALUMINIUM. 7 Jan 47, 2p.
Order from SLA $1.10 62-18336

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1946, v. 12, no. 7, p. 227.

DESCRIPTORS: *Spot welding, *Aluminum.

Kozakevitch, P. and Urbain, G.
SURFACE TENSION OF [LIQUID] IRON AND ITS ALLOYS. III. ELEMENTS OF GROUPS V (N, P, As, Sb, V), IV (C, Si, Sn, Zr), AND III (B, Al, La, Ce). Dec 62.
Order from BISI £5 10s BISI-2609(pt-3)

Trans. of Revue de Métallurgie. Memoires Scientifiques (France) 1961, v. 58 [no. 12] p. 931-947.

DESCRIPTORS: *Iron, *Iron alloys, *Liquid metals, *Surface tension, Nitrogen, Phosphorous alloys, Arsenic alloys, Antimony alloys, Vanadium alloys, Carbon alloys, Silicon alloys, Tin alloys, Zirconium alloys, Boron alloys, Aluminum alloys, Lanthanum, Cerium alloys.

Krauskopf, W.
INVESTIGATIONS OF IMPROVEMENT OF RAW INGOT SURFACE BY USE OF CORRUGATED PASTEBOARD. Dec 62.
Order from BISI £2 BISI-2893

Trans. of Radex Rundschau (Austria) 1961, Apr, p. 543-545.

DESCRIPTORS: *Castings, Slags, Paper.

Livanov, V. A., Elagin, V. I., and Shteininger, V. R.
INVESTIGATION OF WROUGHT ALLOYS OF THE SYSTEM Al-Mg WITH ADDITIONS OF MANGANESE AND CHROMIUM, tr. by S. Klemantaski. [1962] [25]p. 2 refs. FRI Trans. no. 170; [DSIR] NLL M. 4983.
Order from OTS or SLA $2.60 62-25905

Trans. of Aviatsion[nyi] Tekhnol[ogicheskii] Inst[itut] Moscow. Trudy (USSR) 1960, v. 43, p. 68-85.

DESCRIPTORS: *Aluminum alloys, *Magnesium alloys, *Manganese, *Chromium, X-ray diffraction analysis, Hardness, Mechanical properties.

Joint additions of manganese and chromium in these alloys are more effective than additions of these components separately; the optimum relative quantities of manganese and chromium for a total content of them equal to 0.8, 0.6 and 0.4% have been found. The strengt of the alloy Al + 7.5% Mg, containing 0.4% Mn and 0.2% Cr is greater than that of the alloy with 0.6% Mn. Micro-hardness measurements on the solid solution and X-ray structural analysis data show that this can be explained by increased Mg and Mn content in the solid solution. It is undesirable to introduce chromium into the alloy (up to 0.5%) when it contains 0.5 and even 1% manganese since this leads to a decrease in the strength. Nor is it advisable to add titanium (up to 0.2%) when the Al-Mg alloys contain manganese and chromium in the amounts mentioned.

Meunier, F. and Sebille, J.
CAUSES AND EFFECTS OF THE PRESENCE OF HYDROGEN IN WELDS. 6 Oct 48, 10p. (figs. refs. omitted).
Order from SLA $1.10 62-18441

Trans. of Revue de Métallurgie (France) 1947 [v. 44, no. 5/6] p. 180-186.

DESCRIPTORS: *Welds, *Steel, Fracture (Mechanics), Gases, *Hydrogen, Chemical precipitation.

If hydrogen or reducing gases rich in hydrogen are present during welding, hydrogen atoms may go into solution in the metal in amounts which may be several thousand times greater than those in solution at ordinary temperature; The base metal adjacent to the line of fusion occurring at a very high temperature will absorb, by diffusion, quantities of hydrogen several hundred times greater than those which the metal normally holds in solution at room temperature; Upon cooling, supersaturation will cause precipitation of hydrogen in all discontinuities of the metal (intergranular joints, inclusions, pores, etc.) where it recombines into the molecular insoluble form producing local pressure which may be considerable; The combination of stresses resulting from the pressure of these gas pockets, from thermal contraction and possible martensitic transformation of these semi-special steels may produce permanent deformation and rupture; Localization of these cracks and the fact that they may be eliminated by drying the coating suggests that hydrogen is the principal cause. (Author)

Moll, H.
DEFINITION OF THE SURFACE FINISH PROCESS, AND FUNDAMENTAL DATA FOR COMPARISON OF ITS VARIOUS METHODS. 12 Feb 54, 4p. (figs. formulas refs. omitted).
Order from SLA $1.10 62-18423

Trans. of Werkstattstechnik und Maschinenbau (Germany) 1953 [v. 43, no. 3] p. 90-92.

DESCRIPTORS: *Surfaces, *Precision finishing, Standardization, Quality control.

Müller-Uri.
SPECTROCHEMICAL DETERMINATION OF CALCIUM IN MAGNESIUM ALLOYS. 25 Apr 49, 3p (figs. omitted).
Order from SLA $1.10 62-18417

Trans. of Archiv für Metallkunde (Germany) 1947, v. 1, no. 3, p. 137-138.

DESCRIPTORS: *Magnesium alloys, *Calcium, Spectrographic analysis, Ultraviolet spectrophotometers, Chemical analysis, Impurities, Determination.

A working procedure is given for the spectro-chemical determination of calcium in Mg-alloys in contents from 0.03 to 1.2%. The analyses may be performed with sufficient accuracy with the use of a glass spectrograph; the quartz spectrograph is also suited to the work; the latter affords, moreover, the determination of still other elements in the same exposure.

Neuhaus, H.
CONTINUOUS CONTROL AND REGULATION OF THE MOISTURE CONTENT OF BULK MATERIALS BY MEANS OF THE NEUTRON SCATTERING METHOD. Nov 62.
Order from BISI £6 5s BISI-3041

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 15] p. 1017-1026.

DESCRIPTORS: *Neutron scattering, Materials, Humidity, Moisture, Water vapor, Determination, Fast neutrons, Control, Nucleonics, Measurement.

Obolonchik, V. A.
ON THE INTRODUCTION OF RARE METALS IN THE MANUFACTURE OF HIGH GRADE MATERIALS.
7 Dec 62 [6]p. JPRS: 16560.
Order from OTS or SLA $1.10 63-13528

Trans. of #Tsvetnye Metally (USSR) 1962 [v. 35] no. 9, p. 91-92.

DESCRIPTORS: *Rare earth elements, *Rare earth compounds, Heat-resistant metals and alloys, *Heat-resistant materials, Ceramic materials, Powder metallurgy, Production.

Summaries of papers concerning the most important problems requiring solution in order to ensure the extensive introduction into commercial use of many rare metals and their compounds.

Paidassi, J. and Lopez, J.
CONTRIBUTION TO THE STUDY OF OXIDATION OF MAGNETITE IN AIR AT ELEVATED TEMPERATURE.
Nov 62.
Order from BISI £ 9 10s BISI-3017

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1961, v. 58 [no. 9] p. 677-698.

DESCRIPTORS: *High temperature research, *Air, *Magnetite, *Oxidation.

Patrie, J.
HARD CHROMIUM PLATING OF LIGHT ALLOYS.
[1962] [8]p. (refs. omitted).
Order from SLA $1.10 62-18237

Trans. of Revue de l'Aluminium (France) 1948 [v. 25] Nov, p. 335-338.

DESCRIPTORS: *Chromium, *Plating, Electroplating, Aluminum, *Aluminum alloys, Pickling, Metallurgy.

Ramazanzade, M. G.
SURFACE TENSION OF METALS. [1961] [4]p. 14 refs.
Order from OTS or SLA $1.10 AEC-tr-4937

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Fizika (USSR) 1959, no. 1, p. 172-173.
Also available from ATS $5.25 as ATS-14N56R [1961] 3p.

DESCRIPTORS: *Surface tension, *Metals, Potassium, Sodium, Copper, Silver, Gold, Zinc, Mercury, Aluminum, Iron, Platinum, Thermal conductivity.

A method is described for the determination of the surface tension of metals by the use of characteristic thermal conductivities.

Samsonov, G. V. and Neshpor, V. S.
EXTRUDABILITY OF BORIDE, CARBIDE AND NITRIDE POWDERS OF INFUSIBLE METALS [Pressuemost' Poroshkov Boridov, Karbidov i Nitridov Tugoplavkikh Metallov]. [1961] 6p. 7 refs. MDF S-101.
Order from OTS $0.50 62-11385

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 3, p. 405-408.
Other translations are available from SLA as RT-4300 and from HB as HB-3661.

DESCRIPTORS: *Borides, *Carbides, *Nitrides, Powder metallurgy, Particles.

Powders of a number of compounds of transitional infusible metals with boron, nitrogen and carbon were taken for the experiments. All the powders were ground to an average grain coarseness of 2.0 - 2.2 μ for a sufficiently homogeneous grain composition. The measurement of the granularity in the briquet after extrusion did not show any significant variation of the grain size, which affords a basis for considering that the briquet compression occurred, basically, at the expense of the failure of the cohesion between particles and not at the expense of the failure of the particles themselves. The measurement of the electric conduction was accomplished with a twin bridge circuit during the extrusion of the powders in a matrix of non-current-conducting material (textolite) with metallic punches. (Author)

Semenov, Yu. N.
THE ROLLING OF METALLIC POWDERS INTO THIN, HIGH-POROSITY STRIP. Jan 62 [7]p. (figs. omitted) 6 refs. [DSIR] NLL M.3644.
Order from OTS or SLA $1.10 62-25652

Trans. of Poroshkovaya Metallurgiya (USSR) 1961, v. 1, no. 5, p. 69-73.
Another trans. is availab le from HB $4.70 as HB-5589, June 62, 1600 words.

DESCRIPTORS: *Powder metals, Rolling mills, Iron alloys, Nickel alloys, Chromium alloys, Metal plates, Porosity, Sintering, Microstructure, Production, Quality control.

Shchigolev, P. V. and Tomashov, N. D.
INVESTIGATION OF THE METAL ELECTROPOLISHING PROCESS [Isslodovanie Protessa Elektropolirovki Metallov]. [1961] 6p. 27 refs. MDF S-105.
Order from OTS $0.50 62-11386

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 100, no. 2, p. 327-330.
Another trans. is available from ATS $8.00 as ATS-96P60R [1962] 5p.

DESCRIPTORS: *Metals, *Electrolytic polishing.

The study of electrolytes useful in practice and of anodic polarization curves indicates that there is a completely regular relation between electropolishing and the anodic passivity phenomenon. (Author)

Shlyakova, K. S.
THE STRUCTURE AND CERTAIN PROPERTIES OF GAS-FLAME COATINGS. 20 Dec 62 [11]p. 2 refs. JPRS: 16788.
Order from OTS or SLA $1.10 63-13457

Trans. of [Akademiya Nauk SSSR]. Institut Metallurgii. Trudy, 1962, no. 10, p. 194-201.

DESCRIPTORS: Coatings, *Metal coatings, Nickel alloys, Chromium alloys, Alloys, Aluminum compounds, Oxides, Flame spraying, Hardness, Microstructure, Heat treatment, Corrosion inhibition.

From a study of the chemical analyses of the coatings, of the X-rays tests, the heat resistance tests as well as of the microstructure, it was found that as a result of the selective evaporation of chromium and aluminum during the vacuum treatment, and of the selective oxidation during the heat treatment, a compact oxide film is formed on the surface. This film, complex in its composition, impedes the process of diffusion and thus provides a strong defensive property to the surface.

Svistunova, T. V. and Estulin, G. V.
THE EFFECT OF RARE-EARTH METALS ON THE PROPERTIES OF A HEAT-RESISTING NICKEL-CHROMIUM ALLOY. Dec 61 [6]p. (2 refs. figs. omitted) 4 refs. [DSIR] NLL M.3650.
Order from OTS or SLA $1.10 62-25305

Trans. of #Metalloved[enie i] Term[icheskaya] Obrab[otka] Metal[lov] (USSR) 1961, no. 10, p. 13-16.

DESCRIPTORS: *Rare earth elements, *Heat-resistant alloys, *Nickel alloys, *Chromium alloys, Stresses, Rupture, Creep, Resistance.

Addition of small amounts of cerium, Lanthanum, neodymium and praseodymium to alloy EI437 improves substantially the stress-rupture properties and the ductility of the metal during both long- and short-time extension at 700°C., as well as decreases its gas content. The maximum effect of rare-earth metals is observed when their residual amount does not exceed 0.02%. The influence of the elements investigated on the stress-rupture properties of alloy EI437 is the greater the higher their melting point. (Author)

Venstrem, E. K., Likhtman, V. I., and Rebinder, P. A.
ELECTROCAPILLARY EFFECT OF HARDNESS REDUCTION AND OF EXTERNAL FRICTION OF METALS. [1962] 7p. 19 refs.
Order from OTS or SLA $1.10 62-16677

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 107, p. 105-107.

DESCRIPTORS: *Metals, Friction, Hardness, Reduction, *Mechanical properties, Electrolytes, Electric potential, Electrical double layer, *Electrochemistry.

Values of potentials of the neutral charge on hard metals (in relation to the standard weight of electrolyte) are tabulated.

Vogel, R. and Bleichroth, W.
THE TERNARY SYSTEM IRON-PHOSPHORUS-NIOBIUM. Dec 62.
Order from BISI £9 10s BISI-2931

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 3] p. 195-210.

DESCRIPTORS: *Iron, *Phosphorus, *Niobium, Microstructure, X-ray diffraction analysis.

Vyklicky, Miloslav; Prenosil, Bohumil; and Tuma, Hanus.
OXIDATION OF Fe-Al-C ALLOYS (Oxydace Slitin Fe-Al-C). [1962] [21]p. (foreign text included) 16 refs.
Order from SLA $2.60 62-18211

Trans. of Hutnicke Listy (Czechoslovakia) 1958, v. 13, no. 6, p. 490-495.

DESCRIPTORS: *Iron alloys, *Aluminum alloys, *Carbon alloys, Oxidation.

Wolf, H.
THE PRECIOUS METALS IN RESEARCH AND INDUSTRY. [1962] 37p. (refs. omitted).
Order from SLA $3.60 62-18143

Trans. of Metall (West Germany) 1958, v. 12, no. 7, p. 585-593.

DESCRIPTORS: Metals, Industrial production, Scientific research, *Gold, *Silver, *Platinum, Alloys.

Zhdanovich, G. M.
PROBLEMS ON THE THEORY OF THE PROCESS OF PRESSING METAL POWDERS AND THEIR MIXTURES. 7 Dec 62 [102]p. 18 refs. JPRS: 16573. NASA N63-10983
Order from OTS or SLA $9.10 63-13461

Trans. of mono. Nekotorye Voprosy Teorii Protsessa Pressovaniya Metallicheskikh Poroshkov i Ikh Smesei, Minsk, 1960, 98p.

DESCRIPTORS: *Powder metals, Mixtures, *Material forming, Theory, Pressure, Friction, Dies, Elasticity, Iron, Nickel, Cobalt, Copper, Lead, Tin, Equations.

Contents:
The cohesion theory of compaction of metal powders
An introduction to applied theory of metal powder compaction
Determination of the critical unit pressure p_k for metal powders
The method of determining the coefficient of friction by the compact against the walls of the die in the process of compaction
Experimental results
The work of compaction
The elastic properties of compacts
Compaction of mixtures
The distribution of horizontal pressures in the die in the process of compaction of metal powders and their mixtures

LIST OF THE PRINCIPLE EUROPEAN PRODUCERS OF STAINLESS STEELS. Special rept. no. 1 on Contract EUR/C/355/1/60f. [1962] 56p.
Order from OTS or SLA $5.60 EURAEC-31

Trans. of a rept. from Société d'Études, de Recherches et d'Applications pour l'Industrie, Brussels (Belgium) Jan 61.

DESCRIPTORS: *Stainless steel, Production, Industry, Europe, *Steel industry.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 91. 27 Dec 62 [57]p. JPRS: 16786.
Order from OTS or SLA $5.60 63-13656

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 41(62) p. 34; no. 42(63) p. 11; no. 43[64] p. 31; no. 44(65) p. 23; Pravda, Moscow (USSR) 1962, 10 Oct, p. 4; 15 Oct, p. 2; 16 Oct, p. 2; 24 Oct, p. 4; 30 Oct, p. 2.

DESCRIPTORS: *Industrial production, *Metallurgy, *Iron industry, *Steel industry, Instrumentation, *Coke Quality control, Industrial plants, Construction, Standards, *Blast furnaces, Cobalt, Radioactive isotopes, Gamma rays, Machines, Machine tools, Automation, Open hearth furnaces, Rolling mills, Labor, *Thermoelectricity, *Heat-resistant metals and alloys, Heat treatment, Liquid metals, Induction heating.

Contents:
Delays in installing quantometers at Cherepovets, by P. Popov and D. Grinberg
Improving the quality of coke, by Ya. Obukhovskii
Delays in constructing coke battery at Cherepovets, by V. Soldatov and others
Changes recommended in coke standards, by I. Korobov and I. Entin
New gamma-ray measuring equipment for blast furnaces
Completion of modernization at "Krasnaya Etna" plant, by N. Isaev
Reconstruction of the Enakievo metallurgical plant, by V. Belokopytov
Progress in construction of Nizhnii Tagil converter shop, by N. Il'inskii
Hindrances in technical progress in electrometallurgy, by A. Al'tgauzen and others.

Golikov, I. N. and Muzalevskii, O. G.
PROSPECTS FOR THE DEVELOPMENT OF COMBINED PROCESSES OF CONTINUOUS CASTING AND ROLLING OF STEEL. 17 Dec 62 [10]p. 3 refs. JPRS: 16733.
Order from OTS or SLA $1.10 63-13483

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1962, no. 5, p. 9-14.

DESCRIPTORS: *Steel, Mechanical working, Material forming, *Castings, Production.

Productivity of a combined, single stream shape facility for the continuous casting and rolling of steel can amount to approximately 36 - 45 tons per hour. Such an output makes promising the introduction of combined plants in shaped stock rolling production where the equipment can be used as billet equipment. The facilities would be installed in a single technological line with small-shape and wire rolling mills. Calculations show that productivity of an inclined conveyer type installation casting a slab having a cross section of 175 x 1,000 millimeters may amount to 220 - 250 tons per hour. This makes quite tempting the prospect of setting up a combined process for pouring a flat cast billet and hot rolling it into thin sheet of 1, 2 - 10 millimeters thickness. In contrast to a combination installation for shapes, not only the billet would be produced in this facility but the rolled product as well in the form of hot rolled thin sheet. Thus, at the present time, there is a real prospect for the creation of combination processes for continuous casting and rolling of steel for production of sheet, small shapes and wire rod. For production of large and medium shapes there may be promise for the future in using as preforming casting-rolling aggregates semi-combination processes. (Extract)

Kozakevitch, P. and Urbain, G.
SURFACE TENSION OF [LIQUID] IRON AND ITS ALLOYS. II. ELEMENTS OF GROUPS VI (O, S, Se, Te, Cr, W), VII (Mn), VIII (Co, Ni) AND I (Cu). Dec 62.
Order from BISI £7 BISI-2609(pt-2)

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1961, v. 58 [no. 7] p. 517-534.

DESCRIPTORS: Liquid metals, Iron, *Iron alloys, Surface tension, Oxygen, Sulfur, Selenium, Tellurium, Chromium, Tungsten, Manganese, Cobalt, Nickel, Copper.

Krebs, K.
SEGREGATION-DISPLACEMENT AND DEFORMATION IN THE ROLLING OF SOFT STEEL ACCORDING TO INVESTIGATIONS ON A ROD-MILL. 19 Apr 48, 10p. (figs. refs. omitted).
Order from SLA $1.10 62-18401

Trans. of Stahl u[nd] Eisen (West Germany) 1947 [v. 66/67, no. 15/16] p. 244-250 (V[erein] D[eutscher] E[isenhüttenleute (West Germany). Berichte]-181).

DESCRIPTORS: *Steel, Rolling mills, *Deformation, Displacement reactions, *Wire, Drawing (Machine processing), Heating.

Kremnev, L. S. and Geller, Yu. A.
EFFECT OF LOW CONCENTRATIONS OF TITANIUM AND NITROGEN IN HIGH SPEED STEEL (Vliyanie Malykh Kolichestv Titana i Azota v Bystrorezhushchei Stali). Sep 62 [15]p. 5 refs. RTS 2160.
Order from OTS or SLA $1.60 62-32965

Trans. of Izv[estiya] Vyss[hikh] Ucheb[nykh] Zaved[enii]. Chern[aya] Metall[urgiya] (USSR) 1961, no. 9, p. 129-137.

DESCRIPTORS: *Tool steel, Heat treatment, Additives, *Titanium alloys, *Nitrogen, *Nitrides, Grains (Metallurgy), Stability, Hardness, Mechanical properties, *Austenite, *Carbides, Machine tools, Dielectrics.

Kuhn, V. and Detrez, P.
DETERMINATION OF NITROGEN AND IDENTIFICATION OF ALUMINIUM NITRIDE IN CASE STEEL. Nov 62.
Order from BISI £4 15s BISI-3014

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1962, v. 59 [no. 6] p. 405-415.

DESCRIPTORS: *Steel, Hardening, *Aluminium compounds, *Nitrides, Identification, Nitrogen, Determination.

Oberhofer, A. F., Kassnitz, H., and Wenk, H.-K.
PRODUCTION PLANNING BY COMPUTER FOR SECOND-HEAT ROLLING MILLS. Dec 62.
Order from BISI £6 BISI-3008

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 15] p. 1044-1053.

DESCRIPTORS: *Rolling mills, Computers, *Programming (Computers), Industrial production, Steel industry.

Périe, R.
STIRRING TRIALS ON KILLED STEEL IN INGOT MOULDS. Dec 62.
Order from BISI £1 10s BISI-3060

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1959, v. 16, no. 4, p. 899-902.

DESCRIPTORS: *Steel, *Casting, Gases, Carbon compounds, Monoxides, Nitrogen.

Petz, M.
EXPERIENCES WITH THE CONTINUOUS CASTING OF STAINLESS STEELS, PT. I. Dec 62, 3300 words.
Order from HB $8.80 HB-5644

Trans. of Berg- und Hüttenmännische Monatshefte (Austria) 1962, v. 107, no. 4, p. 157-162.

DESCRIPTORS: *Stainless steel, Casting, Cast steel, Manufacturing methods.

Rahmel, A.
OXIDATION OF HEAT-RESISTANT STEELS: INFLUENCE OF ALKALI SULPHATE DEPOSITS WHEN TRACES OF SULPHUR(VI) OXIDE ARE SIMULTANEOUSLY PRESENT IN THE FURNACE GASES. [1962] 20p. 28 refs.
Order from SLA $1.60 62-16866

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1960, v. 31, no. 1, p. 59-65.
Another trans. is available from BISI £4 5s as BISI-1659 [1960].

DESCRIPTORS: *Steel, Oxidation, *Waste gases, Chemical analysis.

For abstract see Technical Translations 4: 117, 1960

Seydel, P.
TECHNICAL PROGRESS IN THE IRON AND STEEL INDUSTRY. Dec 62.
Order from BISI 5 10s BISI-2987

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 17] p. 1187-1196.

DESCRIPTORS: *Iron industry, *Steel industry, Industrial production.

Trau, J.
THE PHYSICO-CHEMICAL PROBLEMS OF THE MAGNETIZING ROASTING OF IRON ORES. Dec 62.
Order from BISI £5 BISI-2397

Trans. of Hutnik (Poland) 1960, v. 27, no. 5, p. 188-195.

DESCRIPTORS: *Iron, *Ores (Metal sources), Magnetite, *Magnetic roasting, *Ores.

Vibrans, G.
THE SOLUBILITY AND DIFFUSION OF HYDROGEN IN STEEL. Dec 62.
Order from BISI £4 15s BISI-2598

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 10] p. 667-673.

DESCRIPTORS: *Steel, *Hydrogen, Diffusion, Solubility.

Zahlaus, H.
COMBINED GAS TURBINE-STEAM POWER PLANT FOR PRODUCING ELECTRIC POWER AND BLAST IN AN INTEGRATED IRON AND STEEL WORKS. Nov 62.
Order from BISI £4 15s BISI-2982

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 16] p. 1105-1113.

DESCRIPTORS: *Steel industry, *Iron industry, Blast furnaces, Electric power production, Steam power plants, Gas turbines, Rolling mills.

NONFERROUS METALS, 1962 [VOL. 35] NO. 11: [SELECTED] ARTICLES. 27 Dec 62 [27]p. 25 refs. JPRS: 16855.
Order from OTS or SLA $2.60 63-13655

Trans. of #Tsvetnye Metally (USSR) 1962 [v. 35] no. 11, p. 80-95.

DESCRIPTORS: *Metals, *Niobium, Deformation, *Rolling mills, Vacuum systems, *Titanium, Zirconium, Tantalum, Molybdenum, *Silicon alloys, *Aluminum alloys, *Powder metallurgy.

Contents:
Investigation of the deformation texture of rolled niobium, by D. I. Lainer and others
Vacuum rolling of chemically active metals, by V. Ya. Ivanev and others

What occurs in excess modification of a silumin, by E. A. Boom
The preparation and properties of aluminides of titanium, by G. V. Samsonov and V. S. Sinel'nikova.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 43. 5 Dec 62 [37]p. JPRS: 16528.
Order from OTS or SLA $3.60 63-13498

Trans. of 18 selected articles from Aug-Oct 62 issues of 14 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Industrial plants, Construction, Scheduling, Copper, Graphite, Deposits, Aluminum, Shale, Basalt, Mica, Machines, Manganese, Ores, Excavators, Labor, Barium compounds, Sulfates, Mining engineering, Asbestos, Lead, Zinc, Industrial equipment, Minerals, Polar regions, Coal, Metals.

Contents:
Criticism of the Almalyk copper factory
New deposit of graphite discovered in the Buryatskaya ASSR
Delays in building the Kirovabad aluminum plant, by Enver Shirmamedov and others
Extracting combustible shale in Estonia, by S. Popov
Basalt as a convenient material, by V. Dorofeev and V. Margulis
New machine for sorting mica flakes
New large manganese ore open-strip pit, by O. Kornienko
The Gipronikel' Institute advertises for more workers
Barite ore deposit is discovered in the Carpathians
At the Armenian State Institute for the design and development of the nonferrous metals industry
New ore mining machinery developed at Karaganda
Building the Dzhetygara asbestos combine
At the Ust'-Kamengorsk lead and zinc combine, by V. Ganzha
At the Kvaisa lead and zinc mine
Industrial expansion in Yugo-Osetiya
The mineral wealth of Yugo-Osetiya
Rationalizers' contributions to the innovators' fund of
(for rest of abstract see TT, v. 9, p.)

the Seven-Year Plan of Kadamdzhai
Non-ferrous metallurgical combine in the transpolar region, by S. Morozov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 44. 26 Dec 62 [24]p. JPRS: 16817.
Order from OTS or SLA $2.60 63-13645

Trans. of Promyshlennost' Armenii (USSR) 1962 [v. 5] no. 9, p. 14-18, 41-45; Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20, no. 7] p. 17-19.

DESCRIPTORS: *Industrial production, Metallurgy, *Mining engineering, Copper, Ores (Metal sources), Costs, Flotation, *Foams, Tests, *Slags, Lead, Zinc.

Contents:
Revise the plan for the expansion of the Kafan Copper ore combine, by V. Oganesyan
Ways of cutting the ore production cost at the Kafan copper ore combine, by G. Lusinyan and E. Pogosyan
Results of industrial tests of the OPSB frothing agents at the Kadzharan concentrator factory, by S. Dudenkov and others
Modernizing the concentrator factory of the Balkhash combine
Utilizing the metallurgical slags, by N. Satybaldin and E. Sagimbaev.

Amosov, V. M.
INVESTIGATION OF THE PROCESS OF SINTERING NIOBIUM POWDER. 26 Dec 62 [12]p. 8 refs. JPRS: 16841.
Order from OTS or SLA $1.60 63-13652

Trans. of #Tsvetnye Metally (USSR) 1962 [v. 35] no. 2, p. 60-65.

DESCRIPTORS: *Powder metallurgy, *Niobium, *Sintering, Ductility, Impurities.

Results are given of studies of the processes occurring in the vacuum sintering of metallic powders of niobium having high impurity content. The recommended schedule for the sintering of niobium powders, permitted the production of ductile metal even when using powders having high impurity content.

Bornemann, K. and Siebe, Paul.
DENSITY ANALYSIS OF METALS AND ALLOYS AT HIGH TEMPERATURES WITH PARTICULAR REFERENCE TO THE MOLTEN STATE. III. ANALYSIS USING THE DILATOMETER PROCESS: TIN-BISMUTH SYSTEM. [1962] 10p. (figs. tables omitted).
Order from SLA $1.10 62-18272

[Free] trans. of Z[eitschrift] fur Metallkunde (Germany) 1922, v. 14, p. 329-334.

DESCRIPTORS: *Tin, *Bismuth, Density, *Dilatometers, *Metals, *Alloys, Liquid metals.

See also 62-14494

De Dyk Man and Nesmeyanov, An. N.
INVESTIGATION ON THE THERMODYNAMICS OF SOLID SOLUTIONS OF COBALT WITH NICKEL.
[1960] 12p. 21 refs. MDF D-143.
Order from OTS or SLA $1.60 62-23001

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Topl[ivo] 1960, no. 1, p. 75-84.

DESCRIPTORS: *Nickel alloys, *Cobalt alloys, Thermodynamics, Vapor pressure, Atomic structure.

The thermodynamics of solid solutions of cobalt with nickel has been investigated herein by the method of measuring the partial vapor pressures over alloys in a wide range of concentrations just as similar investigations had been carried out earlier on the thermodynamics of solid solutions of nitrogen with copper and silver. We have assumed that the similarity in the properties and atomic radii of cobalt and nickel will lead to the formation of a system close to ideal solutions, as the character of the melting diagram of the system partially indicates. (Author)

Fröhlich, K. W.
CONTACT MATERIALS WITH A SILVER BASE.
5 Jan 49, 6p. (figs. tables omitted).
Order from SLA $1.10 62-18377

Trans. of [Zeitschrift für Metallkunde] (West Germany) 1947 [v. 38] no. 1, p. 29-32.

DESCRIPTORS: *Silver alloys, Physical properties, Hardening, Silicon alloys, Nickel alloys, Tungsten alloys, Iron alloys, Zinc alloys, Powder metallurgy.

The applicability of pure silver as a contact material is limited by its softness, its tendency to stick, its relatively low melting point and its sensitivity to filming by sulfur. These four factors cause, according to the conditions of switching, rather strong plastic deformation, sticking, burning (i.e. actually spitting) of the contact material and contact resistance. To harden silver for the making of contact materials, the use of heterogeneous silver alloys is recommended. An alloy of silver with 1.5% Si results in an extremely favorable hard silver contact material. The behavior of FK silver (Ag + 0.15% Ni) especially for heavy current work, is described. It has been found possible to use silver-tungsten alloys produced by powder metallurgy for the plastic forming of and cladding of contacts, with particularly good contact characteristics. Contact characteristics of silver alloys with 20.30% Ni or Fe produced by powder metallurgy have been outlined. The applicability of a silver alloy containing about 30% of zinc as an economy measure has been discussed.

Structural Metallurgy and Corrosion

CORROSION INHIBITION OF METALS IN ACID MEDIA
[1962] [17]p. (foreign text included).
Order from OTS or SLA $1.60 62-16324

Trans. of published Japanese patent 36-10065, 10 July 61, application no. 34-20805, 27 June 59, by Japan Monopoly Co.

DESCRIPTORS: *Acids, *Metals, *Corrosion inhibition, Condensation reactions.

The method of inhibiting corrosion of metals in acid solutions characterized by addition to the acidic solutions to which the metals are in contact of methylol melamines or the condensation products of methylol melamines with urea or with thiourea derivatives, either alone or in admixture with thiourea derivatives. (Author)

CORROSION OF CONCRETE AND ITS PREVENTION.
tr. by A. Skotnicki. Collection of papers presented at a conference in 1953. 1962, 244p. 92 refs. PL-480 Comm.
Order from OTS $2.50 61-31061

Trans. of mono. Korroziya Betona i Mery Bor'by s Nei [Trudy Konferentsii] 1953, Moscow, 1954 [256p.].

DESCRIPTORS: *Corrosion, *Concrete, *Structures, Corrosion research, Underwater, Hydrology, Erosion, *Water entry, Underground structures, Standards, *Reinforced concrete, Coatings, Insulating materials, *Waterproofing, Density, *Resistance, Physical properties, Mathematical analysis, *Freezing, Additives, Sulfites, Sea water, Sulfates, Aluminates, *Dioxides, Silicon compounds, Salts, *Clays, *Detergents, Wetting agents, Climatic factors, *Water supplies, *Construction.

Contents:
Results of 17 years of research on corrosion, by P. P. Budnikov
Corrosion in hydrotechnic structures, by V. M. Moskvin
Leaching out of cement stone under the action of soft waters, by A. N. Adamovich
Some questions and problems in the field of corrosion of concrete used in hydrotechnical structures, by V. V. Kind
Technical specifications for durability of plain and reinforced concrete and insulating coatings in hydrotechnical structures, by G. K. Kement'ev
Importance of the density of cement stone for its corrosion resistance, by V. N. Yung
Influence of physical factors on the durability of hydrotechnical concrete, by V. V. Stol'nikov
The influence of the internal structure of concrete on its durability, by N. A. Moshchanskii
Frost resistance of concrete and its aggregates, by S. A. Mironov
Determination of the frost resistance of cement mortars and concretes according to the dynamic modulus of elasticity, by G. M. Rushchuk
Uniformity of monolithic massive concrete masonry made from separate blocks, by Yu. A. Nilender
Increase in the durability of concrete in hydrotechnical structures by addition of alcohol-sulfite residues, by B. D. Trinker
Corrosion of cement subjected to constant or variable aggresion, by B. G. Skramtaev and others
Sulfate-slag and anhydrite-aluminous cements and their behavior under the action of aggresive saline solutions, by P. P. Budnikov
Dependence of the sulfate resistance of cements on the

mineralogical composition of clinker and on the nature of pozzolana admixtures, by S. D. Okorokov
Corrosion of slag cements, by Yu. M. Butt and K. G. Krut'
Salt-resistant hydraulic cements prepared from portland cement and calcined kaolinite clay, by Yu. T. Tashpulatov
Effect of surface-active admixtures on certain physicotechnical properties of the cement mortar, by M. A. Reshetnikov and I. V. Evfimovskii
Some types of corrosion of concrete in hydrotechnical structures of Georgia, by P. P. Tsulukidze
Causes and prevention of deterioration of concrete in marine structures in the zone of fluctuating water level, by K. A. Adamchik
Corrosion of concrete and certain building materials placed in salty soils in a dry climate, by A. I. Minas
Experience in the construction of the second Baku water main, by Z. A. Natsvalova
Resolution of the Conference on Corrosion of Concrete and on Measures for Its Prevention.

Akimov, G. V., Stoklitskii, L. I. and others.
APPARATUS FOR MICROELECTROCHEMICAL CORROSION STUDIES. [1962] [14]p. 5 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R42. When supply is exhausted, order from OTS or SLA $1.60, 62-18853

Trans. of Akademiya Nauk SSSR. Institut Fizicheskoi Khimii. Trudy, 1951 [v. 2] no. 2, p. 62-68.

DESCRIPTORS: *Electrochemistry, *Corrosion research, Test equipment, *Microscopy, Capillary tubes, Measuring devices (Electrical and Electronic), Electric potential, Measurement.

In these studies, using micromanipulation technique, the distribution of the potentials on the structural components were measured and polarization curves were taken from one electrochemical phase, isolating the other phase of the alloy from the electrolyte. From these data the distribution of the current was determined graphically and the mean corrosion current calculated. The apparatus proposed by us makes it possible to measure potentials, both directly on the structural components of an alloy, and at different distances from the surface under investigation, with simultaneous observation of the corroding surface under the microscope. By using the proposed apparatus, the microcapillary may be adjusted blind to a quite specific, previously selected point of the surface under investigation, which is especially important if the corrosion process being studied takes place with hydrogen depolarization. The fact that different types of microscopes may be used is also a great advantage of this apparatus.

Bückle, H.
DIFFUSION BEHAVIOR OF PRECIOUS METAL CLADDING [I] [1962] 10p. (figs. omitted).
Order from SLA $1.10 62-18498

Trans. of [Zeitschrift für Metallkunde] (West Germany) 1946 [v. 37] no. 1/2, p. 47-52.

DESCRIPTORS: *Rare earth elements, *Metals, *Aluminum, *Silver, *Diffusion, Penetration, Numerical analysis, Curve fitting, Heating, Boundary layer.

On the basis of a general equilibrium diagram, which comprises all of the phenomena, a description is given in a generally applicable manner of the diffusion processes in the heating of a cladding. Several intermediate layers and concentration jumps may here occur whose location is a function of time and temperature and does not coincide with the position of the original boundary layer. Toward the side of the cladding layer, there is always a continuous diffusion curve which continues to run into the pure cladding metal. A definite, generally applicable, clearly and easily determinable index is proposed for the characterization of the diffusion behavior of claddings. Such an index is afforded by the distance between the original boundary layer and the "half-value width" of the diffusion zone on the side of the cladding layer. It is called the "average penetration depth". Its value for 100 hours of heating is proposed as a standard and is denoted by d_{100}. Diffusion tests on the pair of metals Ag/Al lead to the approximate determination of the diffusion constants for the diffusion of Al into Ag. Their order of magnitude is at $D = 10\text{-}5\ cm^2/d$. Cladding tests on the pair of metals Ag/Al afforded, after 100 hours at 500°, an average penetration depth of $d_{100} = 265$ mu. (Author)

Bückle, H.
DIFFUSION BEHAVIOR OF NOBLE METAL CLADDING II. 20 Dec 48, 10p. (figs. formulae omitted).
Order from SLA $1.10 62-18497

Trans. of [Zeitschrift für Metallkunde] (West Germany) 1946 [v. 37, no. 6] p. 175-181.

DESCRIPTORS: *Rare earth elements, *Metals, Aluminum, Silver, Zinc, Cadmium, *Diffusion, Penetration, Crystal structure, Heating, Curve fitting.

A new index is suggested for the diffusion behavior of claddings. It is shown mathematically that the curve $d = f(t)$ as a rule is a parabol a. After prolonged periods of heating, it may be approximated by its tangent. The penetration depths at various temperatures on the silver side are determined for the pairs of metals Ag/Al, Ag/Zn and Ag/Cd. In the pair of metals Ag/Zn, a swelling of the intermediate layers formed was determined which is apparently due to an abnormal diffusion equalization at the boundary surfaces. The formation of the a-silver zinc mixed crystal by diffusion of a thin zinc layer on silver was analyzed and the partial processes occurring here were quantitatively investigated with the aid of micro-hardness tests. (Author) (See also 62-18498)

Domony, A.
CONCERNING STRUCTURE OF BARRIER LAYERS PRODUCED ON ALUMINIUM UNDER THE INFLUENCE OF HOT WATER (AT 80-100°C.). 27 Feb 62, 5p. (refs. omitted)
Order from SLA $1.10 62-16226

Trans. of Aluminium (West Germany) 1961, v. 37, no. 6, p. 351-352.

DESCRIPTORS: *Aluminum compounds, *Hydroxides, *Aluminum alloys, *Powder metallurgy, Transformations, Surfaces, Microstructure, Spectrographic analysis, Transition temperature, *Corrosion inhibition, Coatings, *Corrosion, Water.

Gertsriken, S. D. and Novikov, M. M.
DETERMINATION OF THE DENSITY OF DISLOCATIONS AND VACANCIES ARISING DURING THE DEFORMATION IN NICKEL, SILVER, ALUMINUM AND CERTAIN SILVER ALLOYS. [1962] 26p. 24 refs. Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R11. When supply is exhausted, order from OTS or SLA $2.60, 62-18848

Trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1958, v. 3, no. 6, p. 802-81[4].
Another trans. is available from LC or SLA mi$3.00, ph$6.30 as 60-15539, MCL-141 [1960] [31]p.

DESCRIPTORS: *Nickel, *Aluminum, *Silver, Silver alloys, Annealing, Deformation, *Crystal structure, Dislocations, Gold alloys, Cadmium alloys, Indium alloys, Copper alloys.

Graf, L.
STRESS CORROSION OF HETEROGENEOUS ALLOYS. 9 May 49, 10p. (figs. refs. omitted).
Order from SLA $1.10 62-18376

Trans. of [Zeitschrift für Metallkunde] (West Germany) 1947 [v. 38, no. 7/8] p. 207-212.

DESCRIPTORS: *Alloys, *Corrosion, *Stresses, Sensitivity, Electrochemistry, Phase studies, Crystal structure.

Matveeva, M. P.
INVESTIGATION OF THE MICROSTRUCTURE OF CHROMIUM. 10 Dec 62 [12]p. 9 refs. JPRS: 16591.
Order from OTS or SLA $1.60 63-13473

Trans. of [Akademiya Nauk SSSR]. Institut Metallurgii. Trudy, 1962, no. 10, p. 181-187.

DESCRIPTORS: *Chromium, *Microstructure, Grains (Metallurgy), Heat treatment, Deformation, Dislocations.

Results are presented of the investigation of the microstructure of chromium in the cast and in the deformed states and the applicability of these results to further research is considered. The basic feature of the microstructure of chromium in the case of cast specimens is the presence of a sharply defined block structure, a deep channel along the grain boundaries,

and the appearance of separated etch figures which, in our opinion, are related to the existence of dislocations in the chromium.

Nikiforov, G. D. and Makhortova, A. G.
THE MODE OF FORMATION OF PORES IN WELDING ALUMINIUM AND ITS ALLOYS. [1962] [10]p. (figs. tables omitted) 3 refs.
Order from OTS or SLA $1.10 62-16944

Trans. of #Svarochnoe Proizvodstvo (USSR) 1961, no. 3, p. 5-8.

DESCRIPTORS: *Aluminum, *Aluminum alloys, *Welding, *Porous metals, Microstructure, Porosity.

Nosyreva, S. S. and Polyakova, A. M.
ON STONE-LIKE FRACTURES IN STRUCTURAL STEELS [O Kamnevidnom Izlomev Konstruktsionnykh Stalyakh]. [1961] 4p. (figs. omitted) 3 refs. MDF N-100.
Order from OTS $0.50 62-11627

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 103, no. 3, p. 431-432.

DESCRIPTORS: *Steel, *Structural properties, *Fracture (Mechanics), Diffusion, Grain structures (Metallurgy), Austenite.

The influence of the cooling speed on the magnitude and character of the sulfide distribution in forged steel after overheating and subsequent normal thermal treatment is confirmed in this investigation by the radiography method. The sharp influence of the speed of cooling from the overheating temperature, on the formation

of stone-like fractures and on the character of the distribution of sulfide inclusions enables the conclusion to be made that one of the decisive reasons for the emergence of stone-like fractures in steel is the diffusion process during heating and the liberation, during cooling, of the sulfides from the solid solution along the boundaries of the austenite grains. (Author)

Reininger, H.
CORROSION PROTECTION BY SPRAYED-ON METALLIC COATINGS. [1962] 26p. (figs. tables refs. omitted).
Order from SLA $2.60 62-18248

Trans. of Werkstoffe und Korrosion (West Germany) 1953, v. 4, p. 156-172.

DESCRIPTORS: *Corrosion inhibition, *Metal coatings, Surface properties, Paint sprayers, Adhesion.

Souske, R.
ADVANTAGES OF USING ALUMINIUM IN GALVANIZING BATHS. [1962] 2p.
Order from SLA $1.10 62-18259

Trans. of Metaux (Corrosion-Industries) (France) 1954, v. 29, Feb, p. 88-89.

DESCRIPTORS: *Zinc coatings, *Aluminum alloys, Fluidized metals, Heat treatment, Electrolysis, Impurities, *Steel, Adhesion, *Corrosion inhibition (Corrosion).

Sventitskii, N. S. and Taganov, K. I.
ON SPECTROSCOPIC INVESTIGATIONS OF THE ELECTRICAL EROSION PROPERTIES OF OXYGEN-CONTAINING TITANIUM. [1959] 2p. MDF S-150.
Order from OTS $0.50 62-11342

Trans. of #A[kademiya] N[auk] SSSR. Izvestiya. Ser[iya] Fiz[icheskaya] 1959, v. 23, no. 9, p. 1096-1097.

DESCRIPTORS: *Titanium, Oxygen, Erosion, Corrosion research, Spectroscopy, Thermoelectricity

The investigation of the electrical erosive destruction of metals and alloys can be carried out directly on the spectra of the discharge causing the erosion and on the spectra of the transfer products which are deposited on the false electrode during the erosion. Titanium samples were investigated in which the oxygen concentration varied between 0.12 - 2.32%. The samples had the same basis and differed only in the oxygen content and, consequently, in their hardness. The possibility has also been established of checking titanium samples containing oxygen by means of their thermoelectric properties.

Wranglen, Gösta.
RECENT DEVELOPMENTS OF THE CORROSION THEORY (Korrosionsteorins Nyare Utveckling). [1962] [59]p. (foreign text included) 45 refs.
Order from SLA $5.60 62-18517

Trans. of Svensk Kemisk Tidskrift, 1959, v. 71, no. 8, p. 367-386.

DESCRIPTORS: Metals, *Corrosion, Corrosion inhibition, Reaction kinetics, *Electrochemistry, Thermodynamics.

Recent development of corrosion theory is reviewed. Potential-pH-diagrams are outlined. The electrochemical nature of most corrosion processes is stressed In particular, potential-current-diagrams are treated. These are used to illustrate various corrosion phenomena, such as the hydrogen evolution and oxygen reduction types of corrosion, cathodic, anodic and mixed control, corrosion inhibitors, corrosion in flowing media and cathodic protection. (Author)

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

Fedorov, V. M.
THE PHYSICS OF HIGH ENERGY AND ELEMENTARY PARTICLES. 19 July 62 [6]p. FTD-TT-62-924; AD-284 087.
Order from OTS or SLA $1.10 62-32985

Unedited rough draft trans. of Akademiya Nauk SSSR. Vestnik, 1960 [v. 30] no. 8, p. 120-121.

DESCRIPTORS: Conferences, *Particles, Electrons, Gamma rays, Elastic scattering, Beta decay, Nuclei, Nuclear structure, Nuclear reactions, *Nuclear physics

Topics are noted of papers that were read at a conference in Yerevan from May 30 to July 4, 1960.

Maslennikov, M. V.
ONE ASYMPTOTIC LAW IN THE THEORY OF NEUTRON MODERATION. 20 Aug 62 [9]p. 8 refs. FTD-TT-62-1045. AD-286 632.
Order from OTS or SLA $1.10 62-33642

Unedited rough draft trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) 1961, v. 1, no. 6, p. 1136-1139.

DESCRIPTORS: *Neutrons, Distribution, Velocity, Neutron cross section, Number theory, Integral transforms

An examination is made of the problem of the energy-time distribution of neutrons in a homogeneous moderator which fills an entire space whose nuclei are stationary and have mass M (the mass of a neutron is taken as unity). The state of a neutron is defined by assigning the point (u, t), where t is time, and u is the lethargy of the neutron; $(u, t) \in D$, $D = \{(u, t) \mid u > 0,\ t > 0\}$. It is assumed that neutrons can be captured and scattered by the nuclei of the moderator; scattering is elastic and isotropic in the center-of-mass system of the neutron and nucleus. (Author)

Murin, A. N., Nefedov, V. D. and others.
THE USE OF CHEMICAL CHANGES ACCOMPANYING BETA-DECAY OF RaE FOR THE SYNTHESIS OF ORGANIC COMPOUNDS OF POLONIUM (Ispol'zovanie Khimicheskikh Izmenenii pri Protsessakh Beta-Raspada RaE dlya Sinteza Elementorganicheskikh Soedinenii Poloniya). [1962] [8]p. 16 refs.
Order from OTS or SLA $1.10 AEC-tr-5149

Trans. of mono. Symposium on the Chemical Effects of Nuclear Transformations, Prague, 24-27 Oct 60. Proceedings, v. 2 [Vienna] 1961, p. 183-187.

DESCRIPTORS: *Radiochemistry, *Polonium compounds, Organic compounds, Synthesis, Radioactive decay, *Beta decay, Atomic mass unit, Isotopes, *Radium.

The object of the study was to develop new methods of synthesizing previously unknown organic compounds of polonium. One method of effective synthesis is that based on the utilization of the chemical changes accompanying beta-decay processes. A method of this type was employed to obtain various organic compounds of polonium. For this purpose several organic compounds containing RaE were used, in which, after beta-decay of the RaE, organic compounds of polonium were formed (RaF). The polonium produced by beta-dacay of the RaE accumulated in crystals of $Bi(RaE)Ph_3$ and $Bi(RaE)Ph_3Cl_2$. The polonium daughter products (RaF) were identified by paper chromatography using ethyl acetate, carbon tetrachloride and petroleum ether as solvents. In the case of polonium accumulated in crystals of $Bi(RaE)Ph_3Cl_2$ no $PoPh_3$ was found and almost all the polonium ($92 \pm 3\%$) in this case was found in the form $PoPh_3Cl_2$. (Author)

Ponomareva, L. K. and Zolotavin, V. L.
DÉTERMINATION DU STRONTIUM RADIOACTIF DANS LES EAUX DES RÉSERVOIRS OUVERTS [Determination of Radioactive Strontium in Waters of Open Basins] tr. by Cen Far. CEA Trans. no. R 1599 (text in French)
Order from OTS or SLA $1.60 62-33254

Trans. in French of Radiokhimiya (USSR) 1959, v. 1, no. 2, p. 208-211.

DESCRIPTORS: *Water supplies, *Radiological contamination, Radioactive isotopes, *Strontium, Determination, Yttrium, Chemical precipitation.

On a élaboré des méthodes pour la détermination de ^{90}Sr dans les concentrations limites admissibles dans les eaux des réservoirs ouverts. Au moyen de la première méthode, on détermine l'activité globale de $^{90}Sr + ^{89}Sr$. Le temps de la détermination est de 2 heures. L'erreur maximum est de ±10%. Par la deuxième méthode, on détermine l'activité de ^{90}Sr seul. La méthode nécessite qu'on laisse reposer la solution pendant 24 heures. L'erreur maximum de la détermination est de ±10%. Les deux méthodes donnent la possibilité de déterminer ^{90}Sr dans des concentrations de 5.10^{-11} curies/l, c'est à dire des concentrations inférieures aux concentrations admissibles. (Author)

Skobel'tsyn, D. V.
COSMIC RAYS. 5 Dec 62 [24]p. (figs. omitted) 2 refs. JPRS: 16532.
Order from OTS or SLA $2.60 63-13502

Trans. of Priroda (USSR) 1962 [v. 51] no. 6, p. 3-13.

DESCRIPTORS: *Cosmic rays, *Elementary particles, Nuclear particles, Physics laboratories, Charged particles, Ionization chambers, Strange particles.

A semi-technical summary of recent cosmic ray research. Topics discussed include the multiple production of particles, ionization calorimeters, the mechanism of nuclear collisions, cosmic laboratories, wide atmospheric showers, and various cosmophysical phenomena involving cosmic rays.

Nuclear Engineering and Power

CORROSION PROBLEMS. Quarterly rept. no. 2, 1 June-31 Aug 60. [1959] 120p. Supersedes TID-12 323.
Order from OTS or SLA $9.60 EURAEC-30

Trans. of a rept. prepared in cooperation with Centre Belge d'Étude de la Corrosion, Brussels; Centre d'Étude de l'Énergie Nucléaire, Brussels (Belgium); Société d'Études, de Recherches et d'Applications pour l'Industrie, Brussels (Belgium) Sep 60.

DESCRIPTORS: Corrosion, *Corrosion research, Steel, Stainless steel, Radiation effects, Electrolysis, Electrodes, Potential theory, Potentiometers, Test methods, Corrosive liquids, Electrochemistry

CORROSION PROBLEMS. Quarterly rept. no. 5, 1 Apr-30 June 61. [1962] 114p.
Order from OTS or SLA $9.60 EURAEC-141

Trans. of a rept. prepared in cooperation with Centre Belge d'Étude de la Corrosion, Brussels; Centre d'Etude de l'Energie Nucleaire, Brussels (Belgium); Societe d'Etudes, de Recherches de d'Applications pour l'Industrie, Brussels (Belgium) July 61.

DESCRIPTORS: Corrosion, *Corrosion research, Steel, Stainless steel, Aluminum, Alloys, Zirconium, Iron, Electrolysis, Electrolytic cells, Electrodes, Potential theory, Potentiometers, Test methods, Radiation effects, Corrosive liquids, Electrochemistry.

CORROSION PROBLEMS. Quarterly rept. no. 6, 1 July-30 Sep 61. [1962] [69]p.
Order from OTS or SLA $6.60 EURAEC-175

Trans. of a rept. prepared in cooperation with Centre Belge d'Etude de la Corrosion, Brussels; Centre d'Etude de l'Energie Nucléaire, Brussels (Belgium); Société d'Etudes, de Recherches et d'Applications pour l'Industrie, Brussels (Belgium) Oct 61.

DESCRIPTORS: Corrosion, *Corrosion research, Stainless steel, Steel, Aluminum alloys, Aluminum, Zirconium, Iron, Boilers, Electrochemistry. Electrolysis, Electrolytic cells, Electrodes, Potential theory, Potentiometers, Radiation effects, Tests methods, Corrosive liquids.

SYSTEM FOR TRANSFORMING NUCLEAR ENERGY INTO ANOTHER FORM OF ENERGY, tr. by J. R-P. 25 Sep 62, 30p. (figs. omitted).
Order from OTS or SLA $2.60 62-33250

Trans. of Swiss patent 233,011, cl. 112, by Centre National de la Recherche Scientifique, France, appl. filed 19 Apr 40, pat. registered 30 June 44, pub. 2 Oct 44 (priority claimed in France from 1 May 39).

DESCRIPTORS: *Nuclear energy, Energy conversion, *Reactor fuels, Uranium, Thorium, *Reactor moderators, Hydrogen, Helium, Beryllium, Carbon, Deuterated compounds, Oxygen, *Neutron absorbers, Cadmium, Fast neutrons, Thermal neutrons, Shielding.

The system is characterized in that it comprises a base substance that is capable of giving rise, under the effect of neutrons, to a chain emission of neutrons, having within it a neutron moderator intended to slow down at least a part of the neutrons, in approximate thermal equilibrium with the medium in such a way as to produce an essential stabilization in the development of chains and to allow the liberation of energy furnished by the transmutations of the base substance for purposes of its utilization.

Anderko, K., Richter, H., and Schleicher, H.-W. INVESTIGATION ON ALLOYS OF ZIRCONIUM WITH NIOBIUM AND/OR SILIC[ON] IN VIEW OF THEIR USE AS SHEATHING MATERIAL IN WATER COOLED REACTORS. Quarterly rept. no. 1, 1 Apr-30 June 60. [1962] 21p.
Order from OTS or SLA $2.60 EURAEC-26

Trans. of a rept. from Metallgesellschaft A.G., Frankfurt a.M. (West Germany) 18 July 60.

DESCRIPTORS: *Nuclear reactors, Protective coverings, *Zirconium alloys, Niobium alloys, *Silicon alloys, Tin alloys, Preparation, Metallurgical analysis, Corrosion research.

Several etching processes were tried for the metallographic examination to determine which would be the most appropriate for the various alloys. The zirconium-niobium alloys with 1 and 3% niobium respectively, were subjected to numerous heat treatments and the effect of the latter on the resistance to corrosion was determined according to the standard corrosion test (14 days exposure to steam at 400° C, 200 atm.). The first results pointed to the fact that the samples which had the highest resistance to corrosion were those which had been annealed in the α range; the resistance to corrosion decreased if annealing had been carried out in the β or in the α + β range. (Author)

Anderko, K., Jung-König, W. and others.
INVESTIGATION ON ALLOYS OF ZIRCONIUM WITH NIOBIUM AND/OR SILICON IN VIEW OF THEIR USE AS SHEATHING MATERIAL IN WATERCOOLED NUCLEAR REACTORS. Quarterly rept. no. 2. [1962] 54p. 22 refs. Supersedes TID-12 477.
Order from OTS or SLA $5.60 EURAEC-27

Trans. of a rept. from Metallgesellschaft A.G., Frankfurt a.M. (West Germany) 17 Oct 60.

DESCRIPTORS: *Nuclear reactors, Protective coverings, *Zirconium alloys, *Niobium alloys, *Silicon alloys, Preparation, Solubility, Grains (Metallurgy), Corrosion research, Creep, Tensile properties.

An investigation was made on the constitution of binary Zr-Nb alloys. The solubility of niobium in α-zirconium was highest at about 590° C, in alloys containing spongy zirconium and in alloys which contained iodide zirconium. The maximum solubility of niobium is about 1.54 to 2% in spongy zirconium, but it reaches slightly over 2% for iodide-zirconium. The monotectoid reaction begins in the neighborhood of 590° C. An investigation into the influence of the cooling rate on the texture revealed the fact that by quenching in water alloys with niobium contents ranging between 7.5 and 17% of niobium, a separation of martensitic platelets takes place. The resistance to corrosion is definitely related to the final annealing temperature and thus also to the texture. The best resistance to corrosion is definitely related to the final annealing temperature and thus also to the texture. The best resistance to corrosion was obtained by annealing at 590° C, the highest annealing temperature to be used so far. (Author)

Berkowitz, L., Bertoletti, S. and others.
RESULTS OF WET STEAM COOLING EXPERIMENTS: PRESSURE DROP, HEAT TRANSFER AND BURNOUT MEASUREMENTS WITH ROUND TUBES. Special report no. 2 (CAN-1) on Contract [002-59-11 RDI]. [1962] 253p. CISE Rept. R-27; supersedes TID-12 092.
Order from OTS or SLA $16.50 EURAEC-42

Trans. of a rept. from Centro Informazioni Studi Esperienze, Milan (Italy) Oct 60.

DESCRIPTORS: *Heat exchangers, Steam, Cooling, *Heat transfer, Pressure, Analysis, Computers, Nomograms.

Data obtained with the Piacenza heat transfer facility (62-24602) are collected. Calculations were made with the OLIVETTI ELEA 9002 electronic computer. (Author

Leon, P.
[RESEARCH] ON VIBRATIONS AND PRESSURE LOSSES IN NESTS OF TUBES (Etude sur les Vibrations et les Pertes de Charge dans les Faisceaux Tubulaires). Preliminary theoretical Study; Special rept. no. 1 on Contract 025-60-10 RDF. [1962] 160p. (foreign text included). SOGREAH R-7884.
Order from OTS or SLA $11.50 EURAEC-160

Trans. of a rept. from Societé Grenobloise d'Étude et d'Applications Hydrauliques (France) n.d.

DESCRIPTORS: *Heat exchangers, Fuel rods, *Pipes, Cylindrical bodies, Vibration, Pressure, *Fluid flow, Vortices.

Contents:
Phenomena observed on the downstream side of a generated cylinder immersed in a flow

Vibrations of a cylinder immersed in a flow
Phenomena of the downstream side of two cylinders
Oscillations in the case of several parallel cylinders
Oscillations in the case of a nest of parallel tubes

Speeckaert, P.
PROCESSING OF IRRADIATED URANIUM BY SUBLIMATION OF THE CHLORIDES. [1962] [17]p. 18 refs. CEN BLG-38; R. 1730.
Order from OTS or SLA $1.60 AEC-tr-4549

Trans. of Centre d'Étude de l'Énergie Nucléaire, Brussels (Belgium). R[apport]-1730, 13 July 59.

DESCRIPTORS: Uranium, *Uranium compounds, *Chlorides, *Sublimation, Vapor pressure, *Fission products, Decontamination, Reactor fuel processing, *Fission product activity

A new method for processing uranium by chlorination is described. The method is based on the difference of the vapor pressures of the uranium chlorides and the fission product chlorides. By fractional sublimation, a decontamination factor of about 100 for β activity can be obtained. (Author)

Instruments and Installations

Bok, J., Cosnac, B. de and others.
FAST NEUTRON SPECTROMETER USING LITHIUM 6 AND SILICIUM DIODES. Paper from International Atomic Energy Conference, Belgrade, May 61. July 61, 19p. 4 refs.
Order from OTS or SLA $1.60 AEC-tr-4738

Trans. of mono. [Spectrometre à Neutrons Rapidés à Lithium 6 et Diodes au Silicium, pub. by Commissariat à l'Énergie Atomique, Centre d'Études Nucléaires, Fontenay-aux-Roses] n.d.

DESCRIPTORS: *Neutron spectrometers, *Fast neutrons, *Semiconductors, Diodes, *Lithium, Stable isotopes, *Silicon, Sensitivity, Resolution, Electronic equipment, Preamplifiers, Thermal neutrons

Frost, D.
LOWERING THE PERSONAL DOSE BY USING AN INDIVIDUAL RADIATION-WARNING DEVICE, tr. by R. Presser. 1960 [9]p. UKAEA DEG Inf. Ser. 30(CA); [DSIR NLL M2372].
Order from OTS or SLA $1.10 62-32408

Trans. of Atompraxis (West Germany) 1959, v. 5, p. 310-313.

DESCRIPTORS: *Radiological contamination, Industrial hygiene, *Radiation alarms, Radiation hazards, Inhibition, Dosage, Measurement, Personnel, *Radiation instruments.

The possibilities of individual radiation warning are discussed. The best solution has proved to be an alarm sound the frequency of which increases in proportion to the dose. A battery-operated pocket warning device and its use in clinical work is described. (Author)

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

Stillschweig, Sigismund.
ZIPPER (SLIDE FASTENER), tr. by F. H. B. 27 Sep 62, 10p. (figs. omitted).
Order from OTS or SLA $1.10 62-33248

Trans. of Italian patent 353,296, cl. XX, appl. 8 May 37 granted 11 Oct 37, printed Dec 37 (corresponding French patent 795,762 appl. 30 Sep 35, granted 13 Jan 36, pub. 21 Mar 36).

DESCRIPTORS: *Slide fasteners, Design, Clothing.

PHYSICS

Boldt, G.
RECOMBINATION- AND "MINUS"-CONTINUUM OF NITROGEN ATOMS (Rekombinations- und "Minus"-Kontinuum der Stickstoffatome). [1962] [22]p. (foreign text included) 5 refs.
Order from SLA $2.60 62-16029

Trans. of Zeitschrift für Physik (West Germany) 1959, v. 154 [no. 3] p. 330-336.

DESCRIPTORS: *Plasma physics, *Nitrogen, Ions, Spectrographic analysis, Absorption, High temperature research, Atoms.

The continuum emitted by a wall-stabilized arc burning in nitrogen is measured for temperatures between 10,500 and 13,000°K in the wave length region from 4300 to 6300 Å. After subtraction of the calculated free-free continuum of the electrons in the field of the positive ions there remains a continuum which consists of the recombination- and the "minus"-spectrum of the atoms (where the "minus"-spectrum is to be taken to mean the sum of the free-free continuum of the electrons in the field of neutral atoms and the electron affinity continuum of the atoms). The two contributions are separated from each other according to a method already developed for the investigation of the continua of oxygen. The absorption coefficients, referred to one atom or one singly negatively charged ion per cm^3, are given. The coefficient of the "minus"-continuum, in the specified region of wave lengths and temperatures, is greater by about 5 orders of magnitude than that of the recombination continuum. The intensities of the two emission continua are of the same order of magnitude in the plasma investigated (pure nitrogen, total pressure 1 atm.). The "minus"-continuum can be interpreted predominantly as an electron affinity continuum of excited metastable nitrogen atoms. (Author)

Mal'nev, A. F. and Kremenchugskii, L. S.
BOLOMETRIC DEVICE FOR STUDYING RADIATION. 21 Aug 62 [4]p. FTD-TT-62-1110. AD-286 623.
Order from OTS or SLA $1.10 62-33644

Unedited rough draft trans. of Russian patent 136070, appl. nr. 640884/26, 12 Oct 59, 2p (Byulleten' Izobretenii (USSR) 1961, no. 4).

DESCRIPTORS: *Infrared radiation, Measurement, *Bolometers, Circuits.

Shamayev, Yu. M., Dyatlov, V. L., and Pirogov, A. I.
DYNAMIC CHARACTERISTICS OF FERRITES. [1960] 8p. 14 refs. MDF S-153.
Order from OTS $0.50 62-11337

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Elektromekh[anika] i Avtom[atika] (USSR) 1959, no. 1, p. 27-34.

DESCRIPTORS: *Ferrites, *Magnetic properties, Dynamics, Spin, Vector analysis.

Attempts were made to verify experimentally, for very different regions of magnetic reversal, the following model of magnetic reversal of ferrites by means of rotation of the spin magnetization vectors:

$$\frac{dB}{dt} = r_m \left(1 - \frac{B^2}{B_s^2}\right)(H - H_o).$$

Here r_m is a certain coefficient with the dimensionality of ohm/cm in the practical system of units, H represents the applied field, and H_o a certain constant field.

Shentsov, R. A.
CONDUCTIBILITE THERMIQUE DU BRONZE PHOSPHORIQUE AUX TEMPERATURES DE L'HELIUM LIQUIDE, tr. by Vinogradoff. 30 Mar 62 [10]p. 8 refs. CEA Trans. no. R 1595 (text in French).
Order from OTS or SLA $1.10 62-33259

Trans. in French of Zh[urnal] Eksper[imental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1954, v. 27, p. 126-128.

DESCRIPTORS: *Cryogenics, Thermal conductivity, *Bronze, Copper alloys, Liquified gases, Helium.

Shur, Ya. S., Shtol'ts, E. V. and Glazer, A. A.
ON THE CHANGE IN THE DOMAIN STRUCTURE OF MAGNETICALLY UNIAXIAL FERROMAGNETS IN A MAGNETIC FIELD. [1960] 4p. 4 refs. MDF S-162.
Order from OTS $0.50 62-11288

Trans. of #Fiz[ika] Met[allov i] Metallov[edenie] (USSR) 1959, v. 8, no. 5, p. 685-688.

DESCRIPTORS: *Manganese alloys, *Bismuth alloys, *Ferrites, Crystals, Magnetic properties, Magnetic fields, *Magneto-optic effect.

Smol'kov, N. A. and Eremkina, V. A.
INFLUENCE OF MAGNESIUM ALUMINATE ON THE PROPERTIES OF A MAGNESIUM FERRITE. [1959] 6p. 20 refs. MDF S-149.
Order from OTS $0.50 62-11338

Trans. of Moscow U. Vestnik. [Seriya] M[atematiki] M[ekhaniki] A[stronomii] F[iziki] Kh[imii] (USSR) 1959 [v. 14] no. 2, p. 93-99.

DESCRIPTORS: *Magnesium compounds, Aluminates, *Ferrites, *Spinels, Magnetic properties, Electrical properties, Permeability (Magnetic), Resistance (Electrical), Magneto-optic effect, Phase shifters.

The compounds $MgO \cdot xAl_2O_3 \cdot (1 - x)Fe_2O_3$ were prepared from the oxides MgO, Al_2O_3, and Fe_2O_3. Values of x were 0, 0.25, 0.50, 0.75, and 1.00. A decrease was noted in the following parameters as the concentration of magnesium aluminate increased: The initial and maximum magnetic permeabilities; the coercive force; the residual and maximum inductions; the angle of rotation of the plane of polarization, ϕ; the irreversible phase shift $\Delta\phi^{+}$ - $\Delta\phi^{-}$; the quality, Q; and the value of the resonance field for forward (-) and back (-) waves. The angle ϕ decreased as the temperature rose.

Smol'kov, N. A. and Gushchina, S. A.
NICKEL-CADMIUM FERRITES. [1960] 6p. 9 refs. MDF S-158.
Order from OTS $0.50 62-11345

Trans. of #Fiz[ika] Met[allov] i Metall[ovedenie] (USSR) 1959, v. 8, no. 4, p. 557-561.

DESCRIPTORS: *Nickel alloys, *Cadmium alloys, *Ferrites, Spinels, Magnetic properties, Magnetic susceptibility, Permeability (Magnetic), *Microwaves.

Results are presented of an investigation of the Curie points and the static magnetic characteristics of solid solutions of nickel and cadmium ferrites. The compositions are determined which have good microwave characteristics.

Sobolev, L. V.
TEMPERATURE DEPENDENCE OF THE SPECTRA OF THE COMPLEX DIELECTRIC PERMEABILITY OF POLYCRYSTALLINE NICKEL-ZINC FERRITES. [1959] 5p. 6 refs. MDF S-148
Order from OTS $0.50 62-11339

Trans. of Moscow U. Vestnik. [Seriya] M[atematiki] M[ekhaniki] A[stronomii] F[iziki] Kh[imii] (USSR) 1959 [v. 14] no. 2, p. 107-111.

DESCRIPTORS: *Nickel compounds, *Zinc compounds, *Ferrites, *Dielectric properties, Permeability, Spectroscopy, Temperature.

The electrical properties of mixed nickel-zinc ferrites were studied in polycrystalline samples of the following compositions: $NiO \cdot Fe_2O_3$, $NiO_{0.75} \cdot ZnO_{0.25} \cdot Fe_2O_3$, $NiO_{0.5} \cdot ZnO_{0.5} \cdot Fe_2O_3$, $NiO_{0.25} \cdot ZnO_{0.75} \cdot Fe_2O_3$ and in $ZnO \cdot Fe_2O_3$. The samples were prepared by the conventional technology for the production of ceramics and were sintered at 1200°C. They were disc-shaped of about 30 mm diameter and 2 to 5 mm thickness. The electrodes were superimposed by deposition of silver in vacuo. The temperature dependence of the spectra of the dielectric losses $\alpha(f)$ and the dielectric permeability $\varepsilon(f)$ were measured by a bridge method in the -196 to +200°C range between the 20 and 10^7 cycle range. The spectra of α and ε have noticeable relaxation dispersion in the audio and ultrasonic bands. No limiting constant values of α and ε were detected. As the temperature rises the dispersion region narrows considerably and is shifted toward the higher frequencies; the dispersion variation in the quantities α and ε is diminished considerably. The maximum of the dispersion losses, characterized by the quantity $\tan\delta$, is also shifted toward higher frequencies as the temperature rises. This maximum is not detected at -78 and -196°C. The quantities ε and α have high temperature coefficients; positive for ε and negative for α. The general character of the spectra of $\varepsilon(f)$ and $\alpha(f)$ is the same for samples of different composition but the spectra differ in details as a function of the sample composition.

Sobolev, L. V.
VOLT-AMPERE CHARACTERISTICS AND TEMPERATURE DEPENDENCE OF THE CONDUCTIVITY OF NICKEL-ZINC FERRITES. [1959] 5p. 4 refs. MDF S-147.
Order from OTS $0.50 62-11340

Trans. of Moscow U. Vestnik. [Seriya] M[atematiki] M[ekhaniki] A[stronomii] F[iziki] Kh[imii] (USSR) 1959 [v. 14] no. 1, p. 117-120.

DESCRIPTORS: *Nickel compounds, *Zinc compounds, *Ferrites, Electrical conductivity, Temperature.

Tresvyatskii, S. G. and Cherepanov, A. M.
HIGHLY REFRACTORY SYSTEMS WITH LANTHANIDE AND ACTINIDE OXIDES. 15 May 62 [19]p. (17 refs. omitted) 13 refs. FTD-TT-62-505; AD-277 648.
Order from OTS or SLA $1.60 62-25848

Unedited rough draft trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1961 [v. 6] no. 6, p. 612-618.
An abstract trans. is available from OTS or SLA $1.10 as 62-24495, AID-62-29, 6 Mar 62 [2]p.

DESCRIPTORS: *Refractory materials, Phase transitions, *Rare earth compounds, *Oxides, *Phase studies, Transition temperature, Ceramic materials, Eutectics, Melting, Actinium series, Uranium compounds, Aluminum compounds, Beryllium compounds, Magnesium compounds, Zirconium compounds, Calcium compounds, Silicon compounds, Thorium compounds.

A review is presented of the binary phase diagrams of actinide and lanthanide oxides with UO_2, ThO_2, and other refractory oxides.

Zandberg, E. Ya. and Ionov, N. I.
THE EMISSION OF POSITIVE MOLECULAR IONS FROM HEATED SURFACES IN A VACUUM. Apr 62 [8]p. 5 refs. FTD-TT-62-297.
Order from OTS or SLA $1.10 62-24925

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 141, no. 1, p. 139-142.

DESCRIPTORS: *Thermionic emission, Ion sources, Filaments, *Tungsten, Mass spectroscopy, Electron tubes.

The emission of positive molecular ions from filaments made of tungsten and other materials is studied. It is concluded that the shot-gun effect of ion emission from the grids of electron tubes may be a source of noise in the tubes. Also, thermionic emission of charged organi molecules and radicals may have significance for the mass-spectrometry of organic compounds and for studying the physicochemical processes on the surface of solids.

Electricity and Magnetism

Fomenko, L. A.
MAGNETIC SPECTRA OF NiZn FERRITES AT RADIO FREQUENCIES. [1961] 13p. 14 refs. MDF F-114.
Order from OTS $0.50 62-11543

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1951, v. 21, no. 11, p. 1201-1208.

DESCRIPTORS: *Ferrites, *Nickel compounds, *Zinc compounds, Resonance absorption, Radiofrequency, Magnetic properties, Permeability, Viscosity.

Questions are considered of the frequency dependence o elastic and viscous permeability of ferrites at radio frequencies. It is shown that samples of NiZn ferrites examined have continuous magnetic spectra with explicitly expressed dispersion bands by the elastic permeability and absorption bands by the viscous permeability in the range of 0.75 to 360 mc frequencies. The frequency boundaries of a uniform distribution of the characteristi frequencies of the magnetic relaxation of the substance depend, basically, on the magnitudes of the initial ferrite permeabilities and they shift toward the higher and higher band of frequencies as the magnetic softness of the samples decreases. The character of the frequency dependence of the ferrite permeability can be approximated by the equations of the relaxation motion of the Arkad'ev theory of the continuous spectra of the viscosity. (Author)

Fomenko, L. A.
TEMPERATURE DEPENDENCE OF THE MAGNETIC SPECTRA OF NICKEL-ZINC FERRITES IN THE RADIO FREQUENCY BAND. [1961] 13p. 10 refs. MDF F-115.
Order from OTS $0.50 62-11544

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1953, v. 25, no. 1(7), p. 107-114.

DESCRIPTORS: *Ferrites, *Nickel compounds, *Zinc compounds, Resonance absorption, Radiofrequency, Magnetic properties, Permeability.

Questions are considered of the temperature dependence of the dispersive and absorptive bands in the magnetic spectra of solid solutions of nickel-zinc ferrites with an initial permeability at 20° C of 2140 G/Oer in the 0.05 to 60 mc radio frequency band in the temperature range from -180 to 99° C. It is shown that the NiZn ferrite sample examined has a continuous magnetic spectrum with a relaxation frequency band in the radio frequency range which is displaced toward the low frequencies as the temperature increases up to the Curie point $\theta \approx 120°$ C. This law is maintained even for temperatures above the thermal maximum permeability temperature when the magnetic permeability of the sample drops. (Author)

Kamimura, Hiroshi.
MAGNETISM OF METAL COMPLEX. [1962] [26]p. 15 refs.
Order from SLA $2.60 62-14829

Trans. of Kagaku no Ryoiki (Japan) 1961, v. 15, no. 10, p. 21-29.

DESCRIPTORS: *Complex compounds, Metals, Salts, Ions, Magnetic properties, *Magnetic susceptibility, Paramagnetic resonance, *Resonance absorption, Electrons.

Theories related to the magnetic susceptibility of complex salts are introduced and an attempt is made to consider to what extent the information concerning the electronic structure of the complex ion has been accumulated by comparing the results of experiments. The knowledge obtained from the paramagnetic resonance absorption is dealt with and the facts obtained concerning the action of the electrons in the complex ion are examined. (Author)

Shur, Ya. S., Shtol'ts, E. V. and others.
ON THE TEMPERATURE DEPENDENCE OF THE MAGNETIC PROPERTIES OF MAGNETO-TEXTURED SAMPLES OF POWDER OF THE ALLOY MnBi. [1960] 9p. 7 refs. MDF S-161.
Order from OTS $0.50 62-11287

Trans. of #Fiz[ika] Met[allov] i Metallov[edenie] (USSR) 1959, v. 8, no. 5, p. 678-684.

DESCRIPTORS: *Powder alloys, *Manganese alloys, *Bismuth alloys, Magnetic properties, Temperature.

Results are presented of an investigation of the magnetic properties of magneto-textured samples of fine powders of the alloy MnBi in the temperature range from +20 to -150°. It was found that with decreasing temperature there are changes in the character of the coercive force anisotropy, the magnetization curves, and the curves of the dependence of the remanent magnetization after frequent cycling on the magnitude of the magnetizing field. It is shown that it is possible to use these characteristics to determine the magnetic structure of powders of magnetically uniaxial materials.

Stekol'nikov, I. S. and Shkilev, A. V.
NEW MATERIAL ON THE DEVELOPMENT OF A NEGATIVE SPARK AND ITS COMPARISON TO LIGHTNING. 17 Dec 62 [12]p. 13 refs. JPRS: 16722.
Order from OTS or SLA $1.60 63-13481

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 145, no. 4, p. 782-785.

DESCRIPTORS: *Sparks, Electric discharges, Production, Electric potential, Electron optics, *Lightning, Atmospheric electricity.

An investigation was made of the development of a spark produced by pulse voltage in gaps -rod+plate and -rod+rod on plate by means of an electron-optical converter with light amplification.

Electronics

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, RADIOPHYSICS SERIES, 1962, VOL. 5, NO. 4. 31 Dec 62 [487]p. JPRS: 16917.
Order from OTS or SLA $23.50 63-13673

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1962, v. 5, no. 4, p. 623-826.

DESCRIPTORS: Periodicals, *Electronics, *Radio astronomy, Antennas, Tracking telescopes, Transformers, Plasma physics, Electromagnetic waves, Sound, Absorption spectra, Paramagnetic resonance, Electromagnetic fields, Oscillation, Quantum mechanics, Partial differential equations, Integral equations, Impedance, Electron beams, Waveguides, Trigger circuits, Nonlinear systems, Friction, Servo systems, Differential equations, Computer logic, Radio interferometers, Moon, Extraterrestrial radio waves, Telescopes, Solar eclipse, Cerenkov radiation, Doppler effect, Semiconductors, Molecular beams, Masers, Symposia, Diffraction.

Contents:

Use of an absolute radio astronomical method for calibration of small antennas at centimeter wavelengths, by V. S. Troitskii and N. M. Tseitlin
Restoration in radio astronomy by approximate methods, by A. Balklav
On the possibility of construction of a coordinate transformer of higher accuracy for a tracking system of a radio telescope, by G. G. Basistov
On the transformation of plasma waves into electromagnetic ones in a non-uniform isotropic plasma, by V. V. Zheleznyakov and E. Ya. Zlotnik
Spatial dispersion of relativistic plasma in a magnetic field, by G. I. Svetozarova and V. N. Tsitovich
Interaction of electromagnetic waves and moving interface of two media, by S. N. Stolyarov
Estimate of amplitude and phase fluctuations of a sound wave in the presence of an uneven interface between two media, by E. P. Gulin
Contribution to the theory of spectroscopic saturation effect, by F. V. Bunkin
Interaction of electromagnetic oscillations in three-level systems, by V. M. Fain and others
Contribution to the electromagnetics of media with periodicity in time, by F. V. Bunkin
Field over a plane with inhomogeneous surface impedance, by V. I. Talanov
Concerning the interaction of electromagnetic waves with an electron beam guided by a periodic static field by M. I. Petelin
Trigger properties of nonlinear waveguide systems, by S. A. Akhmanov and R. V. Khokhlov
Radio emission produced by friction between metallic surfaces having different electric potentials, by V. T. Fedin
Dynamics of the simplest model of a servo system with backlash, by V. A. Brusin
On the stability of the solution of second order linear differential equations with sinusoidal coefficients, by K. G. Valeev
Realization of logic functions in one class of functional networks, by D. A. Pospelov
Realization of Ternary Functions with the Aid of Three Phase Codes, by D. A. Pospelov and V. N. Fal'k
Tripartite radio interferometer, by V. I. Babii and A. G. Sukhovei
Choice of time constant for a radio interferometer, by V. I. Babii
Precision measurement of radio emission of the moon on $\lambda = 3.2$ cm, by L. N. Bondar and others
Observations with the large Pulkovo radio cell scope on $\lambda = 33$ cm beyond the long wave limit of its range, by V. Ya. Gol'nev and others
Observation of the solar eclipse of 15 February 1961 on wavelengths 3.2 and 1.6 cm, by Su Shih-wen and others
On the absolute measurement of the intensity of cosmic radio emission, by N. M. Tseitlin
High frequency permittivity of nonisothermal plasma, by E. E. Lovetskii
On the possibility of observing the complex spectral composition of radiation from a moving source in a medium with negative absolute temperature, by G. L. Suchkin
Contribution to the theory of photoemission of semiconductors with large depth of photoelectron yield, by Z. I. Uritskii and V. B. Tulvinskii
Molecular generator using a beam of formaldehyde molecules in the 4 mm band, by A. F. Krupnov and V. A. Skvortsov
All Union Symposium on Wave Diffraction (no. 2).

Bot, J. le, Montagner, S. le and others
NOMOGRAPHIC METHOD: NEW METHOD FOR MEASURING THE COMPLEX DIELECTRIC CONSTANT OF SOLIDS AND LIQUIDS IN CENTIMETRIC WAVE [AND] METHOD OF RAPID CALCULATION OF THE COMPLEX DIELECTRIC CONSTANT IN CENTIMETRIC WAVES, tr. by Bertha P. Klenova. Jan 55 [7]p. 5 refs. TVA 3391.
Order from OTS or SLA $1.10 62-32253

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1953, v. 236, p. 469-471 and 1954, v. 239, p. 147[illegible]-1476. (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Microwaves, Solids, Liquids, *Dielectric properties, Measurement, Impedance, *Nomographs.

Kugaevskii, A. F.
DETERMINATION OF COMPLEX MAGNETIC PERMEABILITY OF FERRITES IN THE METER-WAVE RANGE. 11 Apr 62, 3p. AID Rept. 62-46; AD-276 173.
Order from OTS or SLA $1.10 62-25157

Abstract trans. of #Izmeritel'naya Teknika (USSR) 1962, no. 2, p. 53-55.

DESCRIPTORS: *Permeameters, *Ferrites, Impedance, Measurement, Waveguides.

A variation of the impedance measurement method as applied to measuring complex magnetic permeability of ferrites in the meter-wave band is discussed. It has been proposed to use ferrite specimens of toroidal shape inserted into a coaxial waveguide. (Author)

Semenov, N. A.
ATTENUATION IN A DIELECTRIC WAVEGUIDE. [1960] 9p. 5 refs. MDF S-164.
Order from OTS $0.50 62-11289

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Radiotekh[nika] i Tlekt[ronika] (USSR) 1959, no. 1, p. 83-90.

DESCRIPTORS: *Waveguides, Dielectrics, *Wave transmission, Electromagnetic waves, Attenuation, Equations.

A formula is derived for the determination of the attenuation coefficient of an electromagnetic wave being propagated within a circular isotropic rod, optically more dense than the external medium. The formula takes into consideration dielectric and magnetic losses in both media. (Author)

Slyusarskii, V. A.
ON THE DESIGN OF RETARDING SYSTEMS OF THE SPIRAL-RIDGE STRUCTURE TYPE. [1960] 10p. 11 refs. MDF S-159.
Order from OTS $0.50 62-11346

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiotekh[nika] (USSR) 1959, v. 2, no. 5, p. 581-588.

DESCRIPTORS: *Waveguides, Dielectrics, *Wave transmission, Damping, Diaphragms (Mechanics), Helixes.

The propagation of axially symmetric waves in a spiral placed in an artificially anisotropic dielectric, and in a diaphragmed waveguide with conducting diaphragms, is analyzed.

Molecular Physics and Spectroscopy

Batarchukova, N. R., Karrashev, A. I., and Kirichenko, A. P.
OPTICAL METHOD FOR FILTERING THE GREEN LINE OF Hg^{198}. 23 May 62 [6]p. 2 refs. USASIA Trans. Log no. 1352.
Order from OTS or SLA $1.10 62-25065

Trans. of #Optika i Spektroskopiya (USSR) 1962, v. 12, no. 3, p. 424-426.

DESCRIPTORS: Spectrographic analysis, *Resonance absorption, *Mercury, *Optical filters, Monochromatic light.

Methods are presented for producing constriction of spectral lines of Hg^{198} by means of resonance absorption. Circuits are given of "an absorbed Zeeman filter" for constriction of resonance lines and of "an absorbed thermal filter". With the help of the latter it was found that it was possible to narrow the Hg λ 0.5461 micron line 1.5 to 2 times by subjection to the radiation of a Meggers-type tube using nonelectron cooling up to 15°C. An interferential pattern of equally-sloped rings with a 750 mm propagation difference in the Fabry-Perrot standard is produced. (Author)

Gross, E. F. and Kreingol'd, F. I.
THE INFRARED ABSORPTION SPECTRUM OF Ag_2O. [1962] [4]p. 7 refs. [USASIA] Trans. log no. 1154.
Order from OTS or SLA $1.10 62-32623

Trans. of #Optika i Spektroskopiya (USSR) 1961, v. 10, no. 3 [p. 417].

DESCRIPTORS: *Infrared spectroscopy, Semiconductors, *Silver compounds, *Oxides.

Hadni, Armand.
ELIMINATION OF WATER VAPOR INSIDE A SPECTROGRAPH FOR FAR INFRARED AND METHYL ALCOHOL SPECTRUM, tr. by Bertha P. Klenova. 4 Aug 54, 3p. 3 refs. TVA 3316.
Order from OTS or SLA $1.10 62-32259

Trans. of [Academie des Sciences. Paris]. Compt[es] Rend[us] (France) 1954, v. 238, p. 573-575 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Spectrophotometers, *Water vapor, Dehydration, *Infrared spectroscopy, *Methanols, Absorbents.

Harrand, Monique.
STATE OF POLARIZATION OF THE RAMAN SPECTRA OF VITREOUS SILICA, tr. by Bertha P. Klenova. 4 Aug 54, 3p. 6 refs. TVA 3318.
Order from OTS or SLA $1.10 62-32262

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1954, v. 238, p. 784-786 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: Fuzed materials, *Silicon compounds, Dioxides, *Quartz, *Raman spectroscopy, Polarization.

Shimmura, Yoichi, Ito, Hisao, and Tsuchida, Ryutaro.
THE ABSORPTION SPECTRUM OF HETERO-CONDENSED MOLYBDATES WITH TRI-OR QUADRIVALENT TRANSITION ELEMENTS AS CENTRAL IONS. [1962] 7p. 11 refs.
Order from SLA $1.10 62-14439

Trans. of unidentified mono. (paper) read at the Annual Meeting of the Japanese Chemical Society (no. 6) Apr 53

DESCRIPTORS: *Molybdates, *Absorption spectra, *Ultraviolet spectroscopy, *Transition elements, Valence, Density, Salts, Heteorocyclic compounds, Visibility, Crystals, Colors, Complex ions, Condensation reactions.

The visible absorption spectrum of $(NH_4)_3[M^{III}O_6Mo_6O_{18}H_6]\cdot 7H_2O$ (M^{III} = Al, Cr, Fe, Co does not differ greatly from that of the corresponding $[M^{III}(OH_2)_6]^{3+}$, except that it is rather lighter in color In the ultraviolet part there is a large, peculiar absorption band due to coordinated condensed molybdic acid ions. On the basis of experiments with their absorption spectra, it was found that the $2(NH_4)_2O\cdot Co^{III}{}_2O_3 \cdot 10MoO_3\cdot 12H_2O$ compounds have a structure like multinuclear complex salts. The visible and ultraviolet absorption spectra of $(NH_4)_6[M^{IV}O_6Mo_9O_{26}]\cdot 6H_2O$ (M^{IV} = Mn, Ni) were also determined. (Author)

Tatevskii, V. M.
MOMENTS DIPOLAIRES DES MOLÉCULES ET CLASSIFICATION DES LIAISONS D'APRÈS LEURS TYPES ET LEURS ESPÈCES (Dipol'nye Momenty Molekul i Klassifikatsiya Svyazei po Tipam i Vidam) [Dipole Moments of Molecules and Bond Classification According to Types and Forms] tr. by Mme. Masour. 15 Dec 61 [36]p. (Russian text included) 14 refs. CEA Trans. no. 1457 (text in French).
Order from OTS or SLA $3.60 62-25098

Trans. in French of Moscow U. Vest[nik]. Ser[iya] 2: Khim[iya] (USSR) 1961 [v. 16] no. 1, p. 11-24.

DESCRIPTORS: Molecular structure, *Dipole moments, *Chemical bonds, Classification, Mathematical analysis.

On a élaboré un schéma qui relie les moments dipolaires des molécules aux moments dipôlaires des liaisons chimiques en se basant sur la classification des liaisons chimiques d'après leurs types et leurs espèces, telle qu'elle avait été déjà proposée au préalable. On a démontré que ce schéma pouvait servir pour expliquer la régularité des phénomènes expérimentaux, observée pour les moments dipôlaires des alcanes halogénés, en particulier des chlorures, et qu'il pouvait être utilisé pour le calcul des moments dipôlaires des molécules quand on disposait de données indispensables à la détermination des constantes qui rentrent dans les formules servant au calcul. (Author)

Optics

Astrov, M.
WHAT HAS THE COSMONAUT SEEN? 16 Feb 62 [9]p. FTD-TT-62-29.
Order from OTS or SLA $1.10 62-23665

Unedited rough draft trans. of Znanie-Sila (USSR) 1961 [v. 36] no. 7, p. 8-9.

DESCRIPTORS: *Astronauts, *Space flight, *Visual perception, Illumination, Particles, Atmosphere, Light, Scattering, Sun, Earth.

Explanations are given in a popular or nontechnical manner for the blue halo and the bright orange band that were seen by Gagarin on his flight.

Sabinin, Yu. A. and Mamedova, Z. N.
AN ELECTROMECHANICAL SYSTEM OF PROGRAM CONTROL OF A TELESCOPE. 18 May 62 [13]p. FTD-TT-62-476. AD-286 115
Order from OTS or SLA $1.60 62-32291

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1961 [v. 4] no. 7, p. 103-108.

DESCRIPTORS: *Telescopes, Control, Automatic, *Control systems, Servomechanisms, Commutators, Digital computers, Programming.

A schematic solution is described of the problem of the creation of automatic systems and systems of program control of small-size telescopes, especially those with the aid of which typical observations are made every night according to limited programs composed of a small number of bright stars. As an example of a specialized telescope we cite a telescope used for studying atmospheric transmittance. (Author)

Surget, J. and Veret, C.
UNSCREENING OF IMAGES FOR OPTIMUM VISUAL INFORMATION. Presented at Agard Avionics Panel, Annual Conference (no. 6) Paris, July 62. 6 Dec 62 [11]p. (figs. omitted) 2 refs. JPRS: 16539.
Order from OTS or SLA $1.60 63-13501

Trans. of mono. (paper) Le Detramage des Images comme Procede d'Utilisation Optimale des Informations, n. p., n. d., p. 1-13.

DESCRIPTORS: *Optical images, Images, Photographic images, Visibility, Optical equipment, Wave transmission, Filters (Electromagnetic wave), Low-pass filters, Integral transforms, Frequency, Video signals.

A plane visual object may be represented by a function of the position of each of its points in a plane which can be developed in a Fourier series or a Fourier integral. The frequency of the sinusoidal Fourier constituents is a spacial frequency. An optical system making it possible to reproduce an object may be considered as a filter of the spatial frequencies of the object. In this system, there exists a specific plane in which the distribution of the luminous vibrations corresponds to the frequency spectrum of the object function. By placing suitable masks in this plane, we are able to act selectively on the spatial frequencies so as to stress some of them in relation to others. For example, if the object is regularly screened (decomposed into a line or point grid), we can greatly attenuate the frequency of this screen. Examples of the application of the technique are given for the unscreening of photographic prints, for the suppression of the scanning lines in television images and for the unscreening of striograms taken through the perforated walls of a supersonic wind tunnel. (Summary)

COOLING DEVICE (FINS) FOR SEMICONDUCTOR ELEMENTS. Jan 63.
Order from WBI $2.00

Trans. of main claims, including drawings, of utility model publication no. 37-32107, 8 Dec 62, by Siemens Skertowerke Aktingesellschaft.

DESCRIPTORS: Semiconductors, *Semiconductor devices, *Fins, Cooling.

DETECTION-AGC CIRCUIT USING TRANSISTORS. Jan 63.
Order from WBI $2.00

Trans. of main claims, including drawings, of published Japanese patent 37-18522, 5 Dec 62, by Hitachi Ltd.

DESCRIPTORS: *Automatic gain control, *Circuits, Detection, Transistors, Semiconductor devices.

SEMICONDUCTOR ELEMENT MOUNTING STEM. Jan 63.
Order from WBI $2.00

Trans. of main claims, including drawings, of utility model publication no. 37-32106, 8 Dec 62, by Nippon Telegraph and Telephone Public Corporation.

DESCRIPTORS: *Semiconductors, Semiconductor devices, Mounting brackets.

TRANSISTOR ANGLE-MODULATION DEVICE. Jan 63.
Order from WBI $2.00

Trans. of main claims, including drawings, of published Japanese patent 37-18517, 5 Dec 62, by Sony Corp.

DESCRIPTORS: *Transistors, *Modulators, Modulation, Semiconductor devices.

TRANSISTOR INPUT OR OUTPUT IMPEDANCE COMPENSATION CIRCUIT. Jan 63.
Order from WBI $2.00

Trans. of main claims, including drawings, of published Japanese patent 37-18954. 26 Dec 62, by Nippon Electric Co., Ltd.

DESCRIPTORS: *Transistors, *Electrical impedance, Impedance, *Circuits, Semiconductor devices.

Boltaks, B.
DIFFUSION DE L'ETAIN ET DE L'ANTIMOINE DANS LES COMPOSÉS SEMI-CONDUCTEURS DE Bi_2Se_3 ET Bi_2Te_3, tr by Kefeli. 30 Jan 62 [8]p. 4 refs.
CEA Trans. no. R 1580 (text in French).
Order from OTS or SLA $1.10 62-33262

Trans. in French of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 4, p. 767-768.

DESCRIPTORS: *Semiconductors, *Bismuth compounds, *Selenides, *Tellurides, Labeled substances, *Tin, *Antimony, Diffusion.

Boroffka, Hartmut.
PHOTOCONDUCTIVITY OF ANTHROACENE (Über die Photoleitung von Anthrazen). [1962] [26]p. 13 refs.
Order from SLA $2.60 62-14302

Trans. of Zeitschrift für Physik (West Germany) 1960, v. 160 [no. 1] p. 93-108.

DESCRIPTORS: *Anthracenes, *Photoconductivity, Electrodes, Photoelectric materials, Single crystals, Growth, Light, Intensity, Polarization, Illumination, *Semiconductors.

Bot, Jean le and Montagner, Serge le.
NEW METHOD OF MEASUREMENT OF THE COMPLEX DIELECTRIC CONSTANT OF SOLIDS AND LIQUIDS BY CENTIMETRIC WAVES. [1962] 5p. (figs. omitted) 4 refs.
Order from SLA $1.10 62-18296

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1953, v. 236, p. 469-471 (pub. by Gauthier-Villars et Cie, Paris).
Another trans. is available from OTS or SLA $1.10 in 62-32253, TVA-3391, Jan 55 [7]p.

DESCRIPTORS: Electromagnetism, *Solids, *Liquids, *Dielectric properties, Impedance, Measurement, Waveguides, Statistical processes, Conversion ratio.

Litovchenko, V. G. and Lyashenko, V. I.
INVESTIGATION OF PROPERTIES OF GERMANIUM SURFACES AT VARIOUS TEMPERATURES. I. AMPLITUDE CHARACTERISTICS. II. KINETICS OF PROCESSES. [1962] [45]p. 82 refs. [USASIA] Trans. log no. 1168.
Order from OTS or SLA $4.60 62-32652

Trans. of #Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 1 [p. 61-72].

DESCRIPTORS: *Semiconductors, *Germanium, Surface properties, Temperature, Electric fields, *Photoconductivity, Dynamics, Relaxation time, Electron capture.

The properties of the germanium surface are studied at temperatures of 170° to 350°K. Additional data are derived in favor of the discrete distribution of the surface level in the forbidden zone for the real surface of

germanium. The temperature dependencies of the parameters of "fast" and "slow" surface states are determined as well as the dependencies of surface potential and output work. The kinetics of the field effect are compared with the kinetics of photoconductivity at temperatures of 170° to 305°K. The temperature dependencies of the capture diameters and of other parameters of surface electron states are derived. (Author)

Maeda, Hisao.
TRANSISTOR AGC CIRCUIT. Jan 63.
Order from WBI $2.00

Trans. of main claims, including drawings, of published Japanese patent 37-18521, 5 Dec 62.

DESCRIPTORS: *Transistors, *Automatic gain control, *Circuits, Semiconductor devices.

Rebinder, P. [A].
REDUCING THE SCRATCH HARDNESS BY ADSORPTION OF SURFACE ACTIVE SUBSTANCES: SCLEROMETRY (HARDNESS STUDY) AND PHYSICS OF DISPERSED SYSTEMS. [1962] 10p. (figs. tables omitted).
Order from OTS or SLA $1.10 62-16723

Trans. of Russian language article from unidentified source, n.d.

DESCRIPTORS: *Surface active substances, Hardness, Reduction, Adsorption, Dispersion hardening, Fracture (Mechanics), *Wetting agents, *Solids, *Crystals.

Reducing the hardness $\triangle H$ of a crystalline surface by adsorbing interfacial surface active polar substances from the solutions, is experimentally demonstrated and studied. The $\triangle H$ is connected with a decrease of the free interfacial surface energies $\triangle G$. The $\triangle H$ concentration curves run parallel to the corresponding adsorption isothermes. H reaches the minimum value when the adsorption layer is saturated with the oriented polar molecules. In a homologous series, the "$\triangle H$ effect" increases with the capability for orientation of the molecules of the "hardness reducers" (corresponding to Traub's adsorption rule). Influence of the polarity of the surrounding medium and of the solid body is also studied. Significance of the $\triangle H$ effect in facilitating the cracking or the rupture dilatation and the mechanic dispersion is determined. (Author)

Tammann, G. and Veszi, G.
THE ELECTRICAL CONDUCTANCE OF SALTS IN SINGLE CRYSTALS AND CRYSTALLITE CONGLOMERATES. [1962] 40p. (figs. omitted) 16 refs.
Order from SLA $3.60 62-18275

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (Germany) 1926, v. 150 [no. 4] p. 355-380.

DESCRIPTORS: *Crystals, *Single crystals, Salts, Electrical conductance.

Vasenin, F. I.
THERMOELECTRIC PROPERTIES OF ALLOYS OF THE BISMUTH-TELLURIUM SYSTEM [Termoelektricheskie Svoistva Splavov Sistemy Vismut-tellur]. [1962] [10]p. 4 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R51. When supply is exhausted, order from OTS or SLA $1.10, 62-18858

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1955, v. 25, no. 3, p. 397-401.
A trans. in Dutch is available from OTS or ETC $1.55 as 61-17593, MTWL-915, 9p.

DESCRIPTORS: *Semiconductors, *Bismuth alloys, *Tellurium alloys, *Thermoelectricity, Powder metallurgy, Annealing, Thermal conductivity, Electrical conductance.
The use of the technological methods of powder metallurgy--pressing and annealing--have made it possible to obtain higher thermo-emf's of alloys of the system Bi-Te, which considerably exceed the figures cited in the literature. It has been established experimentally that the inversion of the sign of the thermo-emf in pressed and annealed alloys of the system takes place within limits of 0.2%, in the immediate vicinity of the compound Bi_2Te_3. The erroneousness of the assumption of the existence in the system of a second compound possessing a negative thermo-emf was demonstrated. A comparison of the results of measurement of the electrical properties of cast, pressed, and annealed cast specimens showed that in practice the investigation of the electrical properties of alloys cannot be regarded as complete unless the thermoelectric properties are determined with pressed and annealed specimens. (Author)

Vlasova, R. M. and Stil'bans, L. S.
INVESTIGATION OF THE THERMOELECTRIC PROPERTIES OF BISMUTH TELLURIDE. [1962] [15]p. 5 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R50. When supply is exhausted, order from OTS or SLA $1.60, 62-18857

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1955, v. 25, p. 569-576.

DESCRIPTORS: *Semiconductors, *Bismuth compounds, *Tellurides, *Thermoelectricity, Electrical conductivity, Hall effect, Measuring Devices (Electrical and Electronic).

The paper investigates the dependence of the thermoelectric properties (thermo-emf, electric conductivity, and concentration and mobility of current carriers) of the compound Bi_2Te_3 on the temperature and an excess of one of the components with respect to the stoichiometric composition. The investigations were conducted on polycrystalline specimens of Bi_2Te_3 prepared by the powder-metallurgical method. This analysis shows that the thermoelectric properties of Bi_2Te_3 basically agree with theoretical predictions.

Voitenko, R. M. and Raskina, E. M.
SOME PROPERTIES OF POLYMERIC SEMICONDUCTIVE MATERIALS. [1962] [4]p. 3 refs. C.E. Trans. 2250; [DSIR] NLL M.4884.
Order from OTS or SLA $1.10 62-25384

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136, no. 5, p. 1137-1138.

DESCRIPTORS: *Semiconductors, Polymers, *Acrylonitriles, *Vinyl chlorides, Electrical properties.

The thermo-e.m.f. varies either very little or not at all with temperature. This obviously leads to the conclusion that, the effect of temperature on the electrical conductivity is mainly due to the exponential increase in the mobility of the current carriers with increase in temperature. (Extracted)

Vorob'ev, A. A., Vorob'ev, G. A., and Kostrygin, V. A.
CONCERNING THE DEPENDENCE OF THE BREAKDOWN TIME AND THE BREAKDOWN VOLTAGE OF DIELECTRICS ON THEIR THICKNESS. 8 May 62 [8]p. 14 refs. FTD-TT-62-300.
Order from OTS or SLA $1.10 62-25734

Unedited rough draft trans. of Akademiya Nauk SSSR. [Otdelenie Tekhnicheskikh Nauk]. Izvestiya: Energetika i Avtomatika, 1961, no. 2, p. 62-64.

DESCRIPTORS: *Dielectrics, Thickness, *Electric potential, Voltage, Solids, Electrons, Impact shock, Ionization.

Winkler, O.
STRUCTURE OF THE ALLOYS OF BERYLLIUM WITH SILVER, PALLADIUM AND GOLD. [1962] 24p. (figs. tables refs. omitted).
Order from SLA $2.60 62-18297

Partial trans. (p. 162-170, 173) of Zeitschrift für Metallkunde (Germany) 1938, v. 30, no. 5 [p. 162-173].

DESCRIPTORS: *Beryllium alloys, *Silver alloys, *Palladium alloys, *Gold alloys, Crystal structure.

Theoretical Physics

Bunin, V. A. and Raikhlin, R. I.
A METHOD OF RECEIVING OR EXCITING GRAVITATIONAL WAVES. 14 May 62 [5]p. FTD-TT-62-367.
Order from OTS or SLA $1.10 62-25548

Unedited rough draft trans. of Soviet patent 138279 (669868/26) June 60.

DESCRIPTORS: *Gravity, Excitation, Wave transmission Polarization, Electric potential, Silver, Ions, Electrodes.

To generate and receive gravitational waves we propose using the phenomenon of gravitational polarization discovered by the Russian scientist R. A. Kolli in 1872. This phenomenon is essentially as follows: if a glass tube containing $AgNO_3$ is set up vertically, the positively charged silver ions, since they are heavier than the ions of the acid residue, will settle to the bottom due to gravity; as a result, there is an electrical potential difference between the ends of the tube which will prevent further settling of the ions. Silver electrodes are inserted in the ends of the tube to measure the emf of the gravitational polarization. This emf is proportional to the force of gravity. The described device is called a "gravitational element." The gravitational element is placed in a variable gravitational field, i.e., in the field of a gravitational wave; in this case the emf of the gravitational potential will change in phase with a change in gravity. Instead of a silver nitrate solution we can use any other suitable solution, and instead of the gravitational element we can use a solion. It is not absolutely necessary to use liquid solutions. Solid substances can also be used. That gravitational waves can be generated using a gravitational element is a result of the reversibility of the phenomenon of gravitational polarization i.e., if a voltage is applied to the central gravitational element the center of gravity of the element shifts. Variable voltage will rapidly oscillate the center of gravity, resulting in the appearance of gravitational waves.

Zaitsev, A. A. and Vasil'eva, M. Ya.
STRATIFIED POSITIVE COLUMN OF A GAS DISCHARGE IN A LONGITUDINAL MAGNETIC FIELD. [1962] [18]p. 19 refs. Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R52. When supply is exhausted, order from OTS or SLA $1.60 62-18859

Trans. of #Radiotekhnika i Elektronika (USSR) 1962, v. 7, no. 3, p. 557-565.

DESCRIPTORS: *Gas discharges, Plasma physics, Plasma oscillations, Helium, Stratification, *Magnetic fields, Electrical effects, Frequency, Diffusion.

The effect was investigated of a magnetic field parallel to the axis of the positive column, on (1) the transient process from the homogeneous state of the positive column to the stratified state for artificially induced striations and, (2) the characteristics of steady-state mobile and immobile striations. In the investigated range of 0-1200 gauss the magnetic field gives rise to an increase of the length of the striations, slows the process of stratification of the positive column, and decreases the frequency and velocity of the mobile striations. (Author)

Thermodynamics

Artyukh, L. Yu., Vulis, L. A., and Kashkarov, V. P.
COMBUSTION OF GAS FLOWING AT THE SURFACE OF A PLATE [Obtekanie Plastiny Gazom Goryatsim na Ee Poverzhnosti]. Oct 61, 5p. 7 refs.
Order from ICE in v. 1, no. 1, $15.00/year

Trans. of Inzhener[no]-Fiz[icheskii] Zhur[nal] (USSR) 1961, v. 4, no. 3 [p. 39-45].
Other translations are available from OTS $0.50 as 61-31682, APL/JHU TG-T246, 30 Aug 61, 9p.; and from OTS or SLA $2.60 in 62-19284, FTD-TT-61-321, 29 Jan 62 [25]p.; an abstract trans. from OTS or SLA $1.10 as 61-23489, AID-61-80, 23 May 61, 3p.

DESCRIPTORS: *Gas flow, *Boundary layer, *Combustion, *Compressible flow, Heat exchange, Surface properties, Temperature.

Asaturyan, A. Sh. and Tonkoshkurov, B. A.
LONGITUDINAL FLOW AROUND A HEATED CYLINDER OF A HIGHLY VISCOUS LIQUID. 23 Oct 62 [9]p. 4 refs. FTD-TT-62-1333. AD-290 831
Order from OTS or SLA $1.10 63-13380

Unedited rough draft trans. of Inzhenerno -Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 7, p. 106-111.

DESCRIPTORS: *Cylindrical bodies, *Heat transfer, *Fluid flow, Viscosity, Boundary layer, Theory, Numerical analysis, Partial differential equations.

The problem of heat exchange on the surface of a cylinder subjected to fluid flow along its axis is solved by means of approximation methods of the boundary layer theory.

Boikov, G. P.
ANALYSIS OF THE HEATING OF BODIES WITH RADIANT HEAT ON THE BASIS OF SIMILARITY THEORY. 27 Apr 62 [9]p. 4 refs. FTD-TT-61-229.
Order from OTS or SLA $1.10 62-25817

Unedited rough draft trans. of Politekhnicheskii Institut, Tomsk. Izvestiya (USSR) 1958, v. 101, p. 42-46.

DESCRIPTORS: *Heat treatment, *Radiant heating panels, Thermal conductivity, Theory, Physical properties, Steel, Cylindrical bodies, Heating

Heating of bodies with radiant heat when the thermophysical characteristics of the substance are changing is described by two criteria complexes and five criteria simplexes. For identical materials the qualitative dependence is the same for processes with changing thermophysical characteristics as well as those with constant thermophysical characteristics. In the quantitative relation, the effect of the change of thermophysical characteristics can be accounted for by empirical coefficients. (Author)

Datskovskii, V. M., Eerkhivker, G. P., and Lagutkin, O. D.
CALCULATION OF GAS AND LIQUID MIXING (O Raschete Smesheniya Potokov Gaza i Zhidkosti). Aug 62 [5]p. 2 refs. RTS 2120.
Order from OTS or SLA $1.10 62-32495

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 9, p. 92-93.

DESCRIPTORS: *Heat transfer, Gases, Liquids, Mixtures, Mathematical analysis.

Ievlev, V. N.
LAWS OF COMBUSTION IN TUNNEL TYPE BURNERS (Zakonomernosti Goreniya v Tunnel'nykh Gorelkakh). July 61 [11]p. TIL/T.5183; [DSIR NLL] M.3450; AD-261 632.
Order from OTS or SLA $1.60 62-25350

Trans. of mono. Teoriya i Praktika Szhiganiya Gaza L. Gostoptekhizdat, 1958, p. 128-139.

DESCRIPTORS: *Gas burners, *Flame propagation, Combustion, Jets, Carbon dioxide, Velocity, Pressure

Rodionov, K. P.
CERTAIN THERMODYNAMIC PROPERTIES OF A SOLID UNDER HIGH PRESSURES. [1961] 6p. 8 refs. MDF R-104.
Order from OTS $0.50 62-11620

Trans. of #Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1956, v. 26, no. 2, p. 375-[378].
Another trans. is available from ATS as RJ584, 4p.

DESCRIPTORS: *Solids, *Thermodynamics, *High-pressure research.

On the basis of ordinary thermodynamics and statistics, the influence of high pressure on the spectrum of the thermal oscillations of the atoms or ions and the coefficient of thermal broadening and compressibility of the crystal lattice were investigated.

Vukalovich, M. P., Zubarev, V. N., and Dzampov, B. V.
THE CALORIFIC PROPERTIES OF A 96% (BY VOLUME) SOLUTION OF ETHYL ALCOHOL IN WATER (Kaloricheskie Svoistva 96-Protsentnogo (po Ob'emu) Rastvora Etilovogo Spirta v Vode). July 62 [10]p. 10 refs. RTS 2042.
Order from OTS or SLA $1.10 62-25460

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 10, p. 63-67.

DESCRIPTORS: *Ethanols, Water, Solutions, *Thermodynamics, Enthalpy, Phase studies.

A method is given for calculating the calorific properties of ethyl alcohol. Enthalpy Tables are given for pressures up to 350 kg/cm^2 and temperatures up to 350°C including the saturation region. Heat capacity data are given for the liquid and vapour regions. (Author)

Wave Propagation

Dnestrovskii, Yu. N. and Kostomarov, D. P.
PROPAGATION OF ELECTROMAGNETIC WAVES IN PLASMA ACROSS AN EXTERNAL MAGNETIC FIELD. 11 July 62 [15]p. 3 refs. AID rept. 62-102; AD-282 234.
Order from OTS or SLA $1.60 62-32104

Trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) 1962, v. 2, no. 1, p. 97-106.

DESCRIPTORS: *Electromagnetic waves, *Plasma physics, Electrons, Linear systems, Partial differential equations, Density, Propagation.

The present article is concerned with the propagation of electromagnetic waves in the direction perpendicular to the external magnetic field. The theorem of existence and uniqueness of the solution for the problem stated was proved with the aid of the method of successive ap-

proximations. By the method of integral transformations, solutions are obtained for the problem of excitation of waves by lateral currents and for the problem with initial conditions. From the solutions constructed it follows, in particular, that, regardless of the presence of complex roots in the corresponding dispersion equation, in the propagation of waves across an external magnetic field in the steady-state phase, no transfer of energy takes place from the plasma to the electromagnetic field, or vice versa. (Author)

Sazonov, A. I.
ON A METHOD OF MEASURING THE REFLECTION COEFFICIENT FROM THE EARTH AND INVERSION LAYERS. [1960] 3p. 7 refs. MDF S-176.
Order from OTS $0.50 62-11292

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiotekh[nika] (USSR) 1960, v. 3, no. 4, p. 517-518.

DESCRIPTORS: *Radio waves, *Wave transmission, Reflection, Earth, Atmosphere, Angle of arrival, *Phase measurement, Phase meters.

An amplitude-phase method of continuous measurements of the reflection coefficient using a phasemeter to measure the angles of arrival is described. (Author)

Skuridin, G. A.
APPROXIMATE SOLUTION OF THE PROBLEM OF DIFFRACTION OF A PLANE ELASTIC LONGITUDINAL WAVE RELATIVE TO A HORIZONTAL FAULT (Priblizhennoe Reshenie Zadachi Diffraktsii Ploskoi Uprugoi Prodol'noi Volny Otnositel'no Gorizontal'nogo Sbrosa). [1962] [28]p. (foreign text included) 7 refs.
Order from OTS or SLA $2.60 62-16672

Trans. of Akademiya Nauk Gruzinskoi SSR [Tiflis]. Institut Geofiziki. Trudy, 1955, v. 14, p. 79-90.

DESCRIPTORS: *Mechanical waves, Elasticity, *Diffraction, Propagation, Wave analysis, Numerical analysis, Geophysics, Seismic waves, Geophysical prospecting.

The present work is devoted to the theoretical study of the diffraction of elastic waves from a horizontal fault, the qualitative investigation of the approximate solution obtained, and the eliciting of certain dynamic characteristics of the longitudinal and transverse waves which arise in the course of this phenomenon. The work is mainly mathematical in character; however, certain conclusions, which are important for practical calculation, may be reached on the basis of the final formulas. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. [11-A] (GENERAL SERIES). 27 Nov 62 [31]p. JPRS: 16370.
Order from OTS or SLA $2.60 63-13286

DESCRIPTORS: *Abstracts, Literature, *Bulgaria, *Czechoslovakia, *East Germany, *Poland, *Rumania, *Scientific research.

Consists of abstracts of articles from the East European scientific and technical journals of Bulgaria, Czechoslovakia, East Germany, Poland, and Rumania.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 22 (GENERAL SERIES). 12 Dec 62 [13]p. JPRS: 16650.
Order from OTS or SLA $1.60 63-13508

Consists of abstracts of articles from the East European scientific and technical journals of Hungary,

DESCRIPTORS: *Abstracts, Literature, *Hungary, *Scientific research., Mathematics, Kidney, Surgery, Petroleum industry, Social sciences, Forestry, Genetics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 27 (GENERAL SERIES). 20 Dec 62 [21]p. JPRS: 16782.
Order from OTS or SLA $2.60 63-13454

Consists of abstracts of articles from the East European scientific and technical journals of Bulgaria.

DESCRIPTORS: *Abstracts, Literature, *Bulgaria, *Scientific research, Differential equations, Polynomicals, Particles, Antimonides, Electrets, Solar eclipse, Ionosphere, Ions, Phosphorus, Oxides, Glass, Oils, Oximes, Acids, Plants, Antibiotics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 29 (GENERAL SERIES). 26 Dec 62 [11]p. JPRS: 16834.
Order from OTS or SLA $1.10 63-13452

Consists of abstracts of articles from the East European scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Literature, *Hungary, *Scientific research, Agriculture, Machine translation, Diseases.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 36 (GENERAL SERIES). 31 Dec 62 [48]p. JPRS: 16921.
Order from OTS or SLA $4.60 63-13671

DESCRIPTORS: *Abstracts, Literature, *East Germany, *Hungary, *Rumania, *Scientific research.

Consists of abstracts of articles from the East European scientific and technical journals of East Germany, Hungary, and Rumania.

NLL TRANSLATIONS BULLETIN, 1962, VOL. 4, NO. 7, P. 593-690. July 62, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes reports on visits, translations available from National Lending Library loan collection, miscellaneous announcements, and trans. of Tekhnika v Sel'skom Khozyaistve (USSR) 1962 [v. 22] no. 2, p. 35-38; #Tsvetnye Metally (USSR) 1962 [v. 35] no. 1, p. 1-5; Ugol' (USSR) 1962 [v. 37] no. 1, p. 1-6; Avtomatika, Telemekhanika i Svyaz' (USSR) 1962 [v. 6] no. 2, p. 1-3; and from Tekhnika-Moledezhi (USSR) 1961 [v. 29] no. 5.

DESCRIPTORS: *Electronics, *Electrical engineering, *Agriculture, Rural areas, Industrial plants, *Metals, Production, Economics, *Coal, Fuels, *Prefabricated buildings, Construction, Labor, Housing, *Railroads, Transportation, Control systems, Communication systems, *Industrial research.

Contents:
Radioengineering in the service of agriculture, by A. Ganelin
For a more efficient utilization of capital investments in non-ferrous metallurgy, by V. A. Annenkov
A summary of work in the coal industry in 1961, and its aims in 1962, by A A. Boiko
The unit room, a new "brick" in a new structure, by P. Bronnikov
We shall fulfill on time the plan for the fourth year of the seven-year period (Railways) by N. M. Sememov.

PROBLEMS OF INFORMATION TRANSMISSION, 1961, NO. 10: SELECTED ARTICLES. 12 Oct 62 [60]p. 34 refs. FTD-TT-62-888; AD-287 733.
Order from OTS or SLA $5.60 63-13197

Unedited rough draft trans. of Problemy Peredachi Informatsii (USSR) 1961, no. 10, p. 5-23 and 35-56. ##Another trans. of (p. 49-56) is available from OTS or SLA $1.60 as 62-25858, FTD-TT-62-750, 12 June 62 [14]p.

DESCRIPTORS: *Data transmission systems, *Communication systems, *Multiplex, *Multichannel telephone systems, Telephone communication systems, *Special functions, Geometry, Mathematical logic, *Coding, Errors, Corrections, Signals, *Satellite vehicles, *Identification systems, Tracking, Information theory, Communication theory.
Contents:
Some problems of multichannel communications, by V. A. Makhonin
The geometry of boolean functions and selfcorrecting codes from the point of view of the Erlangen problem, by G. N. Povarov
The construction of nonbinary error-correcting codes and the bound of the number of signals in them, by V. M. Ostyanu
##Identification of spatial objects, by V. S. Fain.

PUBLIC INSPECTION OF FULFILLMENT OF PLANS FOR SCIENTIFIC AND TECHNICAL RESEARCH WORK AND ACHIEVEMENTS. 3 Jan 63 [12]p. JPRS: 16964.
Order from OTS or SLA $1.60 63-13841

Trans. of Ugol' (USSR) 1962 [v. 37] no. 7, p. 62-64.

DESCRIPTORS: *Scientific research, Research program administration.

REPORTS OF SCIENTISTS AND SOLUTION OF OPERATIONAL PROBLEMS (ANNUAL MEETING OF THE ACADEMY OF SCIENCES USSR) (Vystupleniya Uchenykh i Resheniya po Organizatsionnym Voprosam). 23 Aug 62, 13p. Trans. A-1361.
Order from OTS or SLA $1.60 62-33224

Trans. of Akademiya Nauk SSSR. Vestnik, 1962, v. 32, no. 3, p. 19-23.
Another trans. is available from OTS or SLA $10.10 in 62-25176, JPRS-14143, 13 June 62 [126]p.

DESCRIPTORS: *Conferences, Scientific research, Biology, Social sciences, Philosophy, Economics.

Blagonravov, A. A.
NEWS OF JOINT SESSION OF DEPARTMENTS OF TECHNICAL SCIENCES OF USSR AND UKRAINIAN ACADEMIES OF SCIENCES: ROADS OF CREATIVITY. 21 Dec 62 [5]p. JPRS: 16802.
Order from OTS or SLA $1.10 63-13455

Trans. of Nedelya (USSR) 1962, no. 45, 4-10 Nov, p. 15.

DESCRIPTORS: Scientific research, Conferences, *Magnetohydrodynamics, *Electronics, *Mining engineering.

A summary of work being done in magnetohydrodynamics, electronics, and mining engineering.

Dryanovska, O.
POLISH BIOLOGICAL INSTITUTES. 28 Dec 62 [5]p. JPRS: 16889.
Order from OTS or SLA $1.10 63-13632

Trans. of Priroda (Bulgaria) 1962 [v. 11] no. 4, p. 106-107.

DESCRIPTORS: *Biology, *Scientific organizations, Scientific research, *Poland.

An outline of the organizational structure and the primary objectives of biological research groups in Poland.

Engel, Fritz.
ON THE HYSTERESIS IN POLARIMETER CURVES (Zur Hysterese bei Polarimeterkurven). [1962] [19]p. (foreign text included) 9 refs.
Order from SLA $1.60 62-18110

Trans. of Glastechn[ische] Berichte (West Germany) 1958, v. 31, no. 4, p. 133-137.

DESCRIPTORS: *Polarographic analysis, *Hysteresis, Glass, Metals, Bonding, *Seals, Test methods.

Polarimeter curves of glass metal seals are recorded with a new device. The curves show a hysteresis which depends on the velocity of the heating-and cooling process. Reference is made to corresponding phenomena in dilatometric measurements, and an interpretation is submitted on the basis of the glass structure. (Author)

Fischer, E.
MEASUREMENT OF PRESSURE WITH COMPRESSIBLE MATERIAL. [1962] 4p. (figs. omitted).
Order from SLA $1.10 62-18444

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeits[chrift] (West Germany) 1950, v. 92, no. 7, p. 167-168.

DESCRIPTORS: Materials, *Compressive properties, Pressure, Measurement, *Manometers.

Glushkov, V.
IN THE WORLD OF CYBERNETICS. 28 Dec 62 [10]p. JPRS: 16894.
Order from OTS or SLA $1.10 63-13630

Trans. of Nauka i Zhyttya (USSR) 1962 [v. 12] no. 5, p. 17-18.

DESCRIPTORS: *Cybernetics, Digital computers, Control systems, Remote control systems, Reading machines, Manufacturing methods, Automation.

Gurevich, S. B.
ANALOGY OF CHARACTERISTICS OF REPRODUCTION IN TELEVISION AND PHOTOGRAPHY. 2 Jan 62 [26]p. 15 refs. JPRS: 16930.
Order from OTS or SLA $2.60 63-13666

Trans. of Tekhnika Kino i Televideniya (USSR) 1962 [v. 6] no. 11, p. 5-15.

DESCRIPTORS: *Television communication systems, *Motion picture photography, Photography, Video signals, Photographic images, *Data transmission systems, Signal-to-noise ratio, Resolution, Optical phenomena, Distortion, Sensitivity, Communication theory, Communication systems.

Comparisons are made among these characteristics of TV and photographic systems: signal-to-noise ratio, contrast and gradation transmission, resolving power (Research Methods, Techniques and Equipment, TT, and light-versus-signal characteristics. The possibility of an informational evaluation of reproduction quality and sensitivity is discussed. Formulas for information capacity as well as for sensitivity of ideal and real systems are deduced. (Author)

Rasch, Rudolf.
CONTRIBUTION TO THE ACCOMPLISHMENT OF MEASUREMENTS IN THE HEATING MICROSCOPE (Beitrag zur Durchführung von Messungen im Erhitzungsmikroskop). [1962] [10]p. (foreign text included).
Order from SLA $1.10 62-18132

Trans. of Glas-Email-Keramo-Technik (West Germany) 1957 [v. 8] no. 6, sonderdruck no. 4, p. 212-214.

DESCRIPTORS: *Laboratory equipment, Design, Operation, Optical equipment, *Microscopes, Heating, *Glass, Melting.

By an accessory device to the Leitz heater microscope consisting of a compound table with cross spider line and rotary spider line, carrying out work, especially measuring oscillations and marginal angles, is eased considerably, as the quantitative measurements may already be made during the period of heating up. (Author)

Saparina, E.
AN ELECTRONIC CONVERSATIONALIST (AND THE MACHINE REPLIED ...). 17 Dec 62 [17]p. JPRS: 16716.
Order from OTS or SLA $1.60 63-13492

Trans. of Znanie-Sila (USSR) 1962 [v. 37] no. 10, p. 29-32.

DESCRIPTORS: *Digital computers, Computers, *Artificial intelligence, *Speech, *Cybernetics, Speech recognition, Sound, Nervous system, Physiology, Speech transmission, Communication systems.

A discussion of electronic devices that speak and their relationship to the neurophysiology of human symbolic communication.

Semenov, N. N.
SCIENCE AND THE FUTURE. 5 Dec 62 [15]p. JPRS: 16527.
Order from OTS or SLA $1.60 63-13496

Trans. from Komsomol'skaya Pravda (USSR) 1962, 12 Sep.

DESCRIPTORS: *Scientific research, Conferences, Reports, Science.

A translation of an article by Academician N. N. Semenov (reprint of his address before an International Symposium of the IFSW in Moscow).

Svoren', R.
USSR: LAUNCHING PLATFORM TO THE UNIVERSE [AND] CYBERNETICS OF THE EYE. 17 Dec 62 [13]p. (photos. omitted). JPRS: 16718.
Order from OTS or SLA $1.60 63-13548

Trans. of Nauchno-Tekhnicheskie Obshchestva SSSR, 1962 [v. 4] no. 9, p. 2-5 and 60-61.

DESCRIPTORS: *Space flight, *Manned spacecraft, Satellites (Artificial), *Cybernetics, Bionics, *Eye, Retina, Models (Simulation).

A discussion of Soviet manned space flight projects with emphasis on the tandem orbitals of Nikolayev and Popovich. (USSR...) A summary of recent research concerning the electrophysiology of the eye. (Sovren')

Communication Theory

HERALD OF COMMUNICATIONS, 1962 [V. 22] NO. 9(270). 26 Dec 62 [148]p. JPRS: 16840.
Order from OTS or SLA $11.00 63-13649

Trans. of Vestnik Svyazi (USSR) 1962 [v. 22]no. 9(270) p. 1-35.

DESCRIPTORS: Periodicals, *Communication systems, *Communication equipment, Rural areas, Voice communication systems, Telegraph systems, Towers, Antennas, Television transmitters, Transmission lines, Coaxial cables, Interference, Personnel, Training, Telephone equipment, Maintenance, Automation.

Contents:
On a visit to the communication workers of Cuba
Persistent efforts have to be made for the fulfillment goals and improvement in the quality of work of communications organizations (editorial)
Voice-frequency-telegraphy apparatus employing semiconductor devices, by V. N. Amarantov and M. P. Sverdlov
Employment of television tower as a medium-wave antenna, by G. P. Morozov and A. Kh. Lindeberg
A graphic method of grouping factory-length cables by the line impedance of coaxial lines, by A. Pantuchek
On the standards for crosstalk attenuation in long distance low-frequency cables, by T. M. Sakharova and N. A. Khodorovskii
More attention should be given to the home-study training of communication workers, by M. V. Ryzhov
Automation of the preventive-maintenance tests of the ATS [dial office] equipment, by L. I. Sagalovich
New developments for the purpose of helping the technical operation, by A. M. Liepin'sh
We are improving the organization of production processes, by N. D. Grishko
To the territorial agricultural administrations good communication service, by G. Z. Sinchenko
The intercommunication telephone facilities in the kolkhozes and sovkhozes have to be developed on a wider scale, by E. N. Bratanovskii
All resources have to be mobilized for a better service to the kolkhoz-sovkhoz administrations, by I. Ya. Pachkaev
All types of communication service are to be provided for the toilers of the Tselinnyi [virgin land] Krai, by G. T. Shvanev
Communication facilities for the welfare of working people, by S. G. Volkov and L. Ya. Yakovlev
The reports of the working people should be heeded with attention, by A. L. Murashkin
Postal notifications are filled out carelessly, by A. F. Ashmyanskii
Dispatch of printed matter has to be put in order, by A. S. Terikhov
Our demands to the industry, by S. M. Yakushev
A rally of communist-labor brigades and shock workers
Secretary of the international electrocommunication union G. Gross in soviet union
A new stage in the mastering of space.

Borodin, L. F.
RECEIVER WITH FLOATING (RANDOM) THRESHOLD. 15 Aug 61 [15]p. 10 refs. USASIA Trans. Log no. 1217.
Order from OTS or SLA $1.60 62-32613

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 12, p. 61-68.

DESCRIPTORS: *Data transmission systems, Signals, Data, Coding, Corrections, *Communication systems, *Communication theory, *Probability.

A method is proposed for reception of n-digit combinations of a uniform correcting code, in which the transmitted combination is determined by $n_1 < n$ symbols of a received combination, having the greatest a posteriori probabilities. It is shown that such a method has an advantage (in the sense of probability of correct reception) over Wagner's method. The results of a statistical experiment obtained with the aid of an electronic computer are given, with a view to comparing the method under consideration with Wagner's method, with a symbol method, and with an ideal method of reception of correcting code combinations. (Author)

Inomata, Shuji.
A NEW METHOD OF PITCH EXTRACTION USING A DIGITAL COMPUTER. [1962] 6p. 2 refs.
Order from SLA $1.10 62-18082

Trans. of [Nihon Onkyo Gakkaishi] (Japan) 1960, v. 16, no. 4, p. 283-285.
Another trans. is available from SLA $1.10 as 62-14478 [1962] [5]p.

DESCRIPTORS: Speech, *Speech transmission, Voice communication systems, *Pitch discrimination, *Digital computers, Time lag theory, Sound transmission.

A new method of pitch extraction using a digital computer, which is faster than the existing methods, has been proposed. "Locally almost periodic function" is adopted as the mathematical model for voiced speech wave, and the pitch frequency is defined as its "local periodicity". The existence and non-existence of the pitch, i.e., "local periodicity", and its transition are determined by evaluating the newly defined measure of distance in time domain which is invariant under amplitude and other transformations. Possible application of this method might be for automatic speech recognition, a computer simulated vocoder system and general speech researches. This is a part of research efforts made under the Laboratory's research project "LOGOS" (Author)

Suzuki, George.
PITCH EXTRACTOR. [1962] 4p.
Order from SLA $1.10 62-18081

Trans. of [Nihon Onkyo Gakkaishi] (Japan) 1960, v. 16, no. 4, p. 281-283.
Another trans. is available from SLA $1.10 as 62-14469 [1962] 4p.

DESCRIPTORS: Speech, *Speech transmission, Voice communication systems, *Pitch discrimination, Sound transmission, Electronic equipment.

Usual pitch extractors are designed for the use of vocoder and have relatively large time constant. But it is thought necessary to convert pitch frequency into analog voltage with small time constant for the sake of the analysis or the recognition of speech. The pitch extractor having small time const. (10 m sec.) was designed and built, namely, pitch is detected from three formant envelopes, and the discriminator changes it into voltage after SSB modulation and amplitude clipping. (Author)

SOCIAL SCIENCES

Bershadskii, Rudolph Yul'evich.
SOVIET DEVELOPMENTS IN INFORMATION STORAGE AND RETRIEVAL. 26 Dec 62 [56]p. JPRS: 16848.
Order from OTS or SLA $5.60 63-13651

Trans. of mono. Uchenyi Kotoryi Znaet Vse (the Scientist Who Knows All) Moscow, 1962, 46p.

DESCRIPTORS: *Documentation, Data storage systems, Computer storage devices, Information retrieval, Bibliographies, Abstracts, Periodicals.

COMMUNIST PHILOSOPHY. 5 Nov 62 [86]p.
JPRS: 16021.
Order from OTS or SLA $8.10 62-33710

Trans. of [Nauchnye Doklady Vysshei Shkoly]. Filosofskie Nauke (USSR) 1962, no. 3, p. 3-21, 30-40, 68-74.

DESCRIPTORS: *Philosophy, *Communism, Science, *Cybernetics, Digital computers, Computers, Perception, Learning, Reasoning, Reading machines.

Contents:
Development of Communist philosophy, by M. T. Iovchuk and L. V. Skvortsov
Communism and science, by M. N. Rutkevich
Some achievements in cybernetics in the light of Marxist-Leninist teaching on nature of consciousness, by E. H. Timel'shteib.

PROBLEMS OF PHILOSOPHY, 1962 [VOL. 16] NO. 6: [SELECTED ARTICLES]. 3 Dec 62 [38]p. JPRS: 16461.
Order from OTS or SLA $3.60 63-13275

Trans. of Voprosy Filosofii (USSR) 1962 [v. 16] no. 6, p. 118-128 and 154-170.

DESCRIPTORS: *Philosophy, Physiology, Thermadynamics, Models (Simulations), Entropy, Mathematical prediction, *Communication theory, *Information theory, *Probability, *Cybernetics, *Mathematical logic.

Contents:
The existence and evolution of living systems and the second law of thermodynamics, by K. S. Trincher
Negentropy and the amount of information, by I. B. Novik
Algorithms and the possibilities of cybernetics, by S. M. Shalyutin.

SCIENCE: A WEAPON FOR BUILDING COMMUNISM. 28 Dec 62 [7]p. JPRS: 16901.
Order from OTS or SLA $1.10 63-13631

Trans. of Ukrainskii Matematicheskii Zhurnal (USSR) [1961] v. 13, no. 4, p. 3-4.

DESCRIPTORS: Science, *Mathematics, *Communism.

A review of the tasks and accomplishments of Soviet mathematics.

Boitsov, V. V.
A MAJOR RESERVE FOR IMPROVING INDUSTRIAL MANAGEMENT: AUTOMATION. 17 Dec 62 [8]p.
JPRS: 16710.
Order from OTS or SLA $1.10 63-13542

Trans. from Pravda, Moscow (USSR) 1962, 25 Sep.

DESCRIPTORS: *Industrial production, *Management engineering, Automation, Labor, Industrial equipment, Economics.

Borovkov, A. A.
FORMULATION OF PROBABILITY OF TWO ECONOMIC PROBLEMS. 18 Dec 62 [10]p. 2 refs.
JPRS: 16738.
Order from OTS or SLA $1.10 63-13484

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 146, no. 5, p. 983-986.

DESCRIPTORS: *Economics, Statistical processes, Statistical functions, *Probability

In the problem of a traveling salesman it is required to find the shortest closed route s(n) connecting n given points in an r-dimensional euclidean space. We shall consider these points as n independent realizations of the r-dimensional random value with a certain distribution function $F(x) = F(x_1, x_2, \ldots, x_r)$. In the following paragraphs arranged random values evaluating s(n) (the route and its length will have the same designation) are set up in a quite simple manner. It appears, in particular, that with high n and some limitations of F(x) it is possible to indicate a simple rule for establishing route $s_1(n)$ in such manner that the relationship $s_1(n)/s(n)$ "almost always" will not exceed $1+p$, $p > 0$. Evaluation of the number p is included in the study. In the assignment problem for the given matrix $A_n = \|a_{ij}\|$, i, j = 1, ..., n, of the order n it is required to indicate the transposition (k_1^i), i = 1, ..., n for which the sum $\sum_{i=1}^{n} a_{ik_i}$ would be the least (or the greatest). In other words, it is necessary to find the determinant along which the sum of the numbers a_{ij} would be the least. We

shall assume that the numbers a_{ij} are the result of n^2 independent observations of the random value ξ with a certain function of distribution F(x). Such an assumption can be regarded as justified in a number of cases. Then it appears to be possible, again with the aid of elementary methods, to obtain evaluation operating "almost always," i.e. for "almost all" realizations of the matrices. (Author)

Lande, L. N.
CYBERNETICS AND PEDAGOGY. 17 Dec 62 [10]p. JPRS: 16727.
Order from OTS or SLA $1.10 63-13482

Trans. of Nauka i Zhizn' (USSR) 1962 [v. 29] no. 3, p. 80-83.

DESCRIPTORS: *Cybernetics, *Teaching machines, Instructors, Education, Students.

Possible uses of teaching machines are discussed.

Stepanyan, Ts. A.
SUBJECT MATTER OF THE COURSE: BASIC PRINCIPLES OF SCIENTIFIC COMMUNISM. 28 Dec 62 [35]p. JPRS: 16903.
Order from OTS or SLA $3.60 63-15026

Trans. of Voprosy Filosofii (USSR) 1962 [v. 16] no. 6, p. 25-35.

DESCRIPTORS: Science, *Communism, Philosophy.

Temchin, E.
AUTOMATA ARE PARASITES AND HARD WORKERS. 8 Jan 63 [7]p. JPRS: 17039.
Order from OTS or SLA $1.10 63-13832

Trans. of Ogonek (USSR) 1962 [v. 40] no. 44, p. 14.

DESCRIPTORS: Automatic, *Dispensers, Effectiveness, *Commerce.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5913
Sanin, Aleksey Aleksandrovich
ELECTRONIC INSTRUMENTS IN NUCLEAR PHYSICS (Elektronnyye pribory yadernoy fiziki) Moscow, Fizmatgiz, 1961. 615p. 13,150 copies printed.

BR-SOV/5921
Krayzmer, Leonid Pavlovich
DISCRETE INFORMATION STORAGE DEVICES (Ustroystva khraneniya disdretnoy informatsii) Moscow, Gosenergoizdat, 1961. 359p. 8,000 copies printed.

BR-SOV/5982
NINTH INTERNATIONAL CONFERENCE ON HIGH-ENERGY PHYSICS. KIYEV, JULY 15-25, 1959 (Devyataya mezhdunarodnaya konferentsiya po fizike vysokikh energiy, Kiyev 15-25 iyulya 1959 g.) Moscow, 1961. 739p. 2,500 copies printed.

BR-SOV/6022
Kapustin, Aleksandr Pavlovich
EFFECT OF ULTRASOUND ON THE KINETICS OF CRYSTALLIZATION (Vliyaniye ul'trazvuka na kinetiku kristallizatsii) Moscow, Izd-vo AN SSSR, 1962. 106p. Errata note included. 3,200 copies printed.

BR-SOV/6028
Kovalev, Mikhail Prokhorovich, Sergey Petrovich Morzhakov, and Klavdiya Sergeyevna Terekhova
DYNAMIC BALANCING OF ROTORS OF GYROSCOPIC SYSTEMS (Dinamicheskoye uravnoveshivaniye rotorov giroskopicheskikh sistem) Moscow, Oborongiz, 1962. 257p. Errata slip inserted. 5,500 copies printed.

BR-SOV/6035
Mukhina, Zinaida Stepanovna, and Yekaterina Ivanovna Nikitina
ACCELERATED METHODS OF ANALYZING TITANIUM AND TITANIUM ALLOYS (Uskorennyye metody analiza titana i yego splavov) Moscow, Oborongiz, 1961. 121p. Errata slip inserted. 5,050 copies printed.

BR-SOV/6039
Voinov, Semen Georgiyevich, and Anatoliy Georgiyevich Shalimov
BALL-BEARING STEEL (Sharikopodshipnikovaya stal') Moscow, Metallurgizdat, 1962. 480p. Errata slip inserted. 5,200 copies printed.

BR-SOV/6040
Korovin, Nikolay Vasil'yevich
NEW COATINGS AND ELECTROLYTES IN ELECTROPLATING (Novyye pokrytiya i elektrolity v gal'vanotekhnike) Moscow, Metallurgizdat, 1962. 134p. Errata slip inserted. 7,300 copies printed.

BR-SOV/6042
Markov, Aleksey Ivanovich, Candidate of Technical Sciences, Docent
CUTTING OF HARD-TO-MACHINE MATERIALS BY MEANS OF ULTRASONIC AND SONIC VIBRATIONS (Rezaniye trudnoobrabatyvayemykh materialov pri pomoshchi ul'trazvukovykh i zvukovykh kolebaniy) Moscow, Mashgiz, 1962. 330p. Errata slip inserted. 8,000 copies printed.

BR-SOV/6043
Basharinov, A. Ye., and B. S. Fleyshman
METHODS OF STATISTICAL SEQUENTIAL ANALYSIS AND THEIR APPLICATION IN RADIO ENGINEERING (Metody statisticheskogo posledovatel'nogo analiza i ikh radiotekhnicheskiye prilozheniya) Moscow, Izd-vo "Sovetskoye radio," 1962. 352p. Errata slip inserted. 10,000 copies printed.

BR-SOV/6044
Rokotyan, Ye. S., Doctor of Technical Sciences, Ed.
ROLLING INDUSTRY; HANDBOOK (Prokatnoye proizvodstvo; spravochnik) v. 2. Moscow, Metallurgizdat, 1962. 685p. 8,500 copies printed.

BR-SOV/6046
Temkina, Berta Yakovlena
ADVANCED TECHNOLOGY OF ELECTROLYTIC AND CHEMICAL DEPOSITION OF COATINGS (Progressivnaya tekhnologiya naneseniya gal'vanicheskikh i khimicheskikh pokrytiy) Moscow, Mashgiz, 1962. 174p. 11,000 copies printed.

BR-SOV/6050
Yakovlev, Yuriy Sergeyevich
HYDRODYNAMICS OF AN EXPLOSION (Gidrodinamika vzryva) Leningrad, Sudpromgiz, 1961. 312p. 2,500 copies printed.

BR-SOV/6051
Kuzin, Lev Timofeyevich
DESIGNING OF DISCRETE CONTROL SYSTEMS (Raschet i proyektirovaniye diskretnykh sistem upravleniya) Moscow, Mashgiz, 1962. 682p. Errata slip inserted. 9,000 copies printed.

BR-SOV/6053
Presnyakov, Aleksandr Aleksandrovich
PHYSICS OF THE ROLLING PROCESS (Fizika protsessa prokatki) Alma-Ata, Izd-vo AN KazSSR, 1962. 192p. 1,800 copies printed.

BR-SOV/5922 listed in Technical Translation, Vol. 9, No. 1, p. A-1, should read; BR-SOV/5953

TRANSLATIONS IN PROCESS

ARTIFICIAL EARTH SATELLITES, 1962, No. 13: SELECTED ARTICLES.
Iskusstvennyi Sputniki Zemli (USSR) 1962, no. 13, p. 67-84, 123-133.

DEEP SEISMIC MAPPING OF THE EARTH'S CRUST IN THE USSR.
Mono. Glubinnoe Seismicheskoe Zondirovanie Zemnoi Kory v SSSR, Leningrad, 1962, 495p.

NEWS OF INSTITUTES OF HIGHER LEARNING. AERONAUTICAL ENGINEERING 1962, No. 2: SELECTED ARTICLES.
Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika, 1962, no. 2, p. 65-71, 113-133, 138-151.

NEWS OF INSTITUTES OF HIGHER LEARNING. ELECTROMECHANICS 1962, No. 2: SELECTED ARTICLES.
Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1962, no. 2, p. 140-167, 177-195.

Botezatu, Radu
GRAVIMETRIC NETWORK OF THE ROMANIAN PEOPLES REPUBLIC.
Probleme de Geofizica (Rumania) 1961, v. 1, p. 7-85.

Fishvein, N. B.
ELECTRODES AND FUSING AGENTS FOR ARC-WELDING. (Elektrody i Flyusu dlya Dugovoi Svarki).
Nauchno-Populyarnaya Biblioteka Rabochego-Svarshchika (USSR) 1961, no. 9, 62p.

Gekker, R. F.
INTRODUCTION TO PALEOECOLOGY.
Mono. Vvedenie v Paleoekologiyu, Moscow, 1957, 83p.

Gorodinskii, S. M., Parkhomenko, G. M., and Tarasenko, N. Yu.
RADIATION HYGIENE. VOL. I, HYGIENE WORKS.
Mono. Radiatsionnaya Gigiena. Tom I, Gigiena Truda, Moscow, 1962, p. 5-39, 87-108, 126-137.

Heisenberg, W.
ON THE STABILITY AND TURBULENCE OF FLUID FLOWS.
Annalen der Physik (Germany) 1924, v. 74, no. 15, p. 577-627.

Hopf, L.
THE COURSE OF SMALL VIBRATIONS ON A CURRENT OF FRICTION FLUID.
Annalen der Physik (Germany) 1914, v. 44, no. 9, p. 1-60.

Kardashov, D. A., ed.
GLUES AND THE TECHNOLOGY OF GLUING.
Mono. Klei i Tekhnologiya Skleivaniya, Moscow, 1960, 285p.

Magak'yan, I. G.
ORE DEPOSITS: ECONOMIC TYPES OF METALLIC MINERAL DEPOSITS.
Mono. Rudnye Mestorozhdeniya: Promyshlennye Tipy Mestorozhdenny Metallicheskikh Poleznikh Iskopaemykh, Erevan, 1961, 548p.
To be published by AGI June 63.

Polskii, N. I.
ON VARIOUS GEOMETRIES.
Mono. O Razlichnykh Geometriyakh, Kiev, 1962, 100p.
To be published by API Spring 64.

Thews, Edmund R.
NO ENGLISH TITLE GIVEN
Mono. Metallurgische Verarbeitung von Altmetallen und Ruckstanden. Band 1: Altweissmetalle, Munich, 1948, P. 66-69, 157-166, 202-204, 272-277.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 9, Number 1.

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No changes are necessary for this issue.